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VICK'S MAGAZINE

ILLUSTRATED
MONTHLY



NOVEMBER, 1899.

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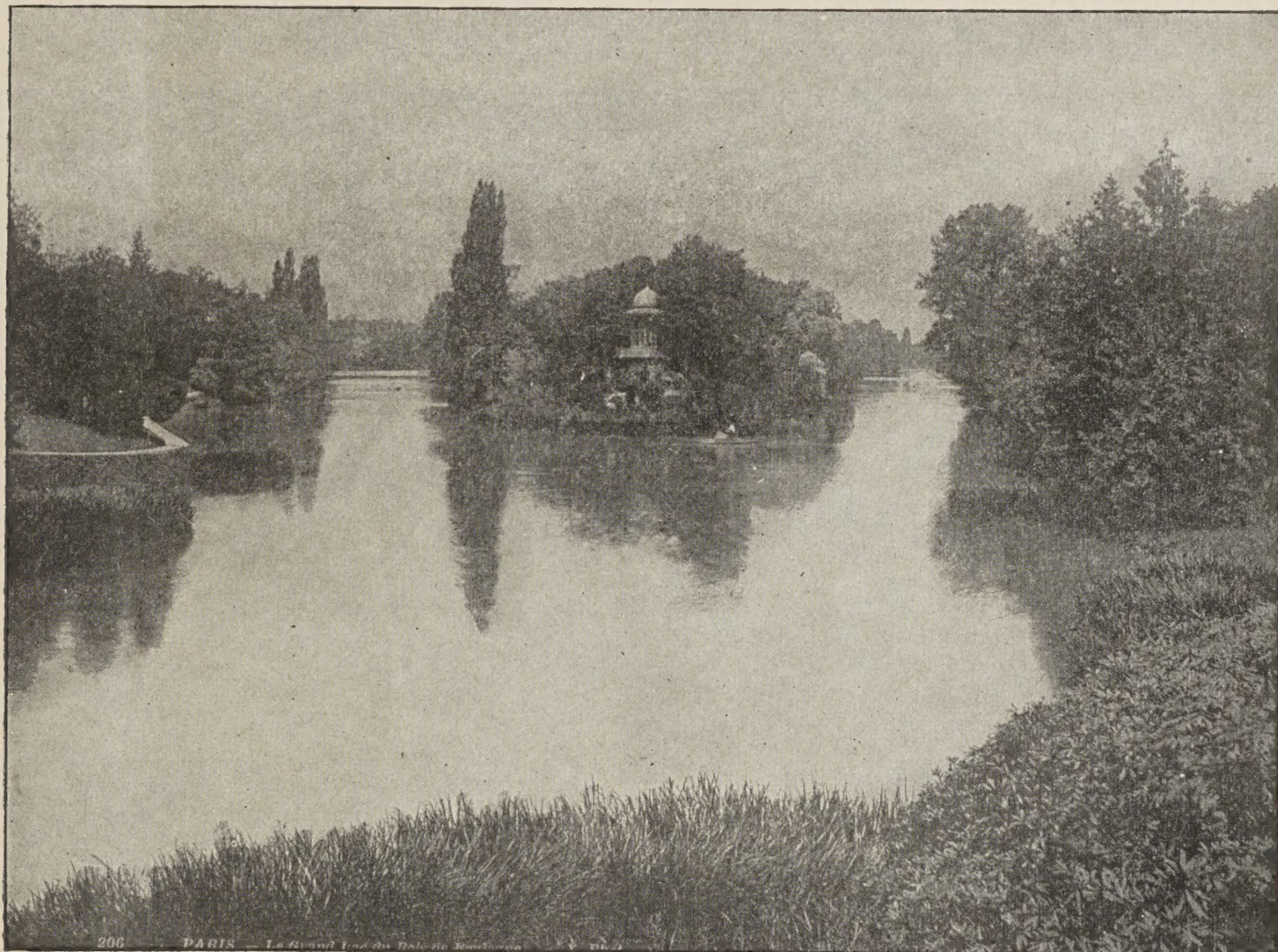
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MONARCH, BURBANK, GRAND DUKE.

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LAKE IN THE BOIS DE BOULOGNE

WATER SITES FOR COUNTRY RESIDENCES.

WATER, either as a flowing stream or as a broad sheet, so greatly enhances the beauty of a landscape that its presence should be one of the prime considerations of those citizens who are looking about for a country location. Even a small flow of water, if steady, can by means of damming be made the feeder to a pond of considerable size, the presence of which may be a source of very pleasing effect. The planting of the borders of a pond or lakelet will admit of the use of a class of trees and shrubs whose peculiar charms can never be so well presented as in connection with water. Then, too, the numerous beautiful water plants

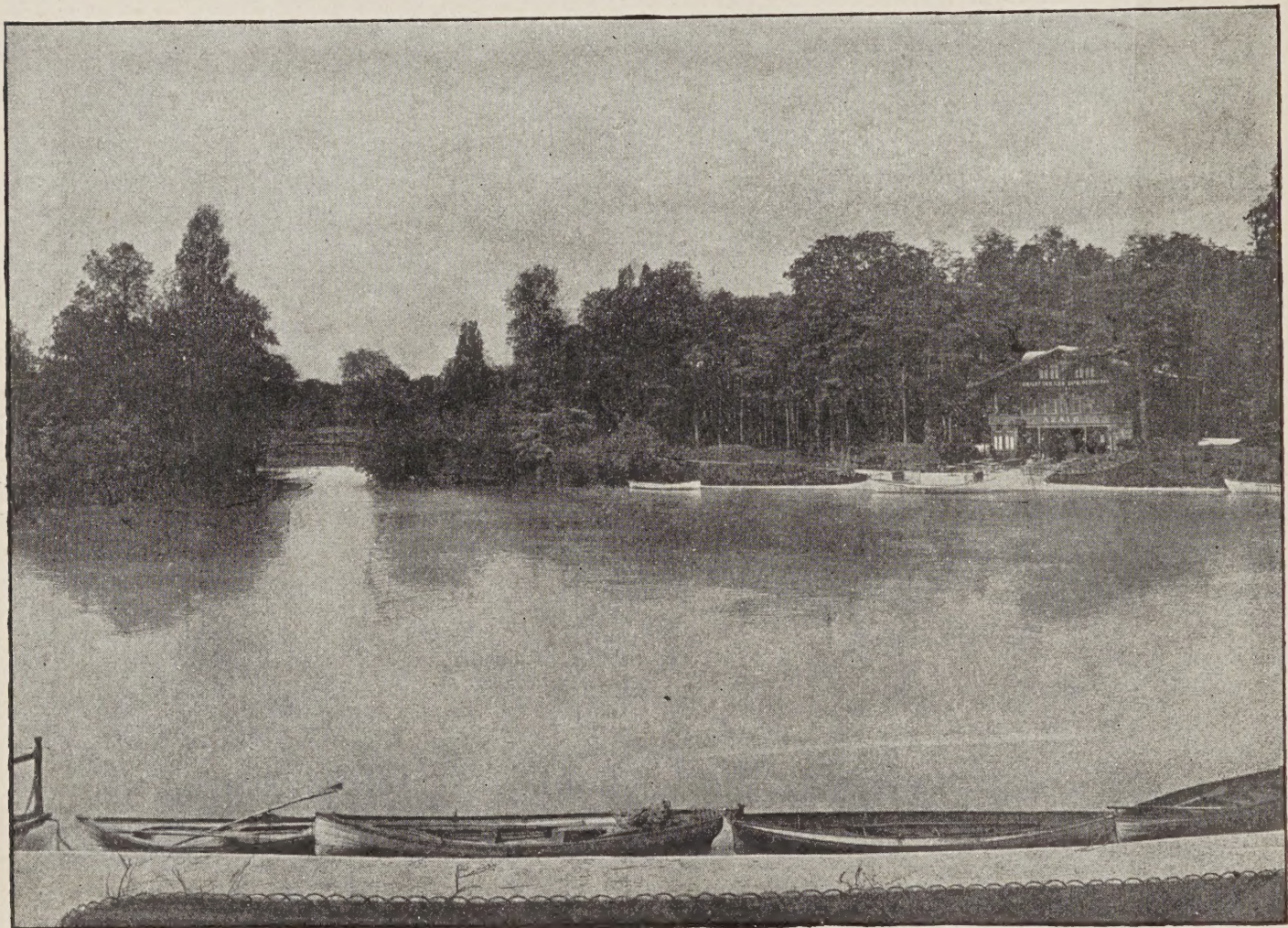
that may be there provided for afford a further attractive feature. Our northern country embracing a large portion of New England and westward through to the Mississippi and northward in Wisconsin, Minnesota and the Dakotas, is a region abounding in streams, lakes and large ponds. New York is abundantly supplied with beautiful lakes and streams of pure water, and Canada is not less fortunate. Then there are the great lakes and the magnificent St. Lawrence, the beautiful Hudson, and the slow winding level-banked Mohawk. Pennsylvania is generously provided with noble streams. The appropriate places along

these water banks will always be the choicest sites for country residences and will be sought for by those city dwellers who desire places for summer recreation. Here nature is displayed in her most beautiful and charming aspects and invites her lovers to linger in her presence. Some portions of what are called the finger lakes in this State are of singular and remarkable beauty, revealing broad expanses of pure water, beyond which rise series of high wood-crowned hills whose sides display wide extended views of cultivated fields and grazing grounds; others present scenes of level or rolling surfaces containing noble spec-

in planting on a place of this kind must be done under the inspiration of the prevailing spirit of the place and in entire harmony with it.

"Art is the child of Nature; yes,
Her darling child in whom we trace
The features of the mother's face;
Her aspect and her attitude."

Now, not to be misunderstood as to the treatment to be followed in planting of the grounds immediately surrounding a residence in one of these localities, it may be well to say that it is not meant that we should deprive ourselves of the beautiful trees and flowering shrubs that are now in cultivation and rely entirely on those of native growth. It is proper to use the



CHALET DES ISLES
IN THE BOIS DE BOULOGNE

imens of trees standing singly or in groups; areas of woodlands interspersed through the landscape, and long lines of trees and shrubs may be traced following the banks of streams, and in every direction the views are beautiful.

"Sweet fields beyond the swelling flood
Stand dressed in living green."

Such places for summer residences, when other essential conditions are present, should be selected, as with the proper outlay in their arrangement, and the planting of the grounds with reference to the distant scenery, their attractions will be perennial. In these beautiful places where nature has done so much, art need do but little; but whatever is done

former in proximity to the dwelling, but further away let the planting run into our native thorns and viburnums and cornus and many other shrubs and species of native trees. Above all, do not shut out the distant views.

Besides the landscape effects which make a body or stream of water so desirable, there are also to be taken into account the advantages of boating, sailing, angling, bathing and other recreations. The views presented of the Bois de Boulogne, show how perfectly art may simulate Nature and what scenes of beauty may be made by the landscape gardener in the artificial treatment of water.

C. W. S.

THE AMERICAN POMOLOGICAL SOCIETY.*

THURSDAY EVENING SESSION.

THE first address after the opening of the evening session was delivered by Prof. G. Harold Powell, Delaware Agricultural College, Newark, Del. His subject was "Importance of the Plant Individual in Horticultural Operations." He told how plants of the same varieties often differ. Some plants when given the same culture are productive, and others bear lightly. "I have observed this difference in fruit trees, between trees of the same varieties. One instance which I noted was three

think that to a large extent, the individuality in fruit trees can be transmitted and preserved. We advise all fruit growers to propagate fruits from the most productive trees in their own orchards."

Herbert J. Webber, U. S. Department of Agriculture, entertained and instructed the audience with a stereopticon lecture on "Systematic Plant Breeding." He showed the great improvements in the various fruits and grains which were the results of the work which has been done in hybridization.



CASCADE IN THE
BOIS DE BOULOGNE

Winesap apple trees of about the same size and the same age which were growing in the same orchard. These showed a difference of thirty to sixty per cent. in the yield of apples. This seems to show that there are strong inherent qualities in fruit trees. I think these strains of light and heavy bearing are generally found in orchards. Are these qualities hereditary, and can they be transmitted through the buds by taking scions from the most productive trees? Can we thus establish a pedigree in fruit trees, and obtain the results of selection that extend through several generations? We have made some experiments along this line, and we

Prof. W. M. Munson, University of Maine, Orono, Me., read a paper on the "Blueberry, its Past, Present and Future." He said the value of the blueberry crop in this country last year was \$100,000. Waste land can be utilized for growing blueberries. The land is burned over and the seeds are then scattered over it. The blueberries are much appreciated by many people, and large quantities could be marketed.

Walter Swingle, U. S. Department of Agriculture, next described "Fruit Culture in the

* This report is continued from page 9 of the October number.

Mediterranean Countries," and illustrated his talk with lantern slides.

FRIDAY MORNING SESSION.

The committee on nominations reported the re-nomination of all the present officers of the society except one, and they were duly elected. The officers elected were as follows: President, Charles L. Watrous, Des Moines, Iowa; Secretary, W. A. Taylor, Washington; Treasurer, L. R. Taft, Agricultural College, Mich.; Vice Presidents, N. G. Vincenhiller, Little Rock, Arkansas; J. H. Hale, South Glastonbury, Conn.; Alexander Pullen, Milford, Delaware; W. Saunders, Washington, D. C.; C. L. Taber, Florida; P. J. Berckmans, Augusta, Georgia; H. M. Dunlap, Savoy, Indiana; J. Troop, Lafayette, Ill.; Charles C. Patten, Charles City, Iowa; W. H. Barnes, Topeka, Kansas; W. M. Munson, Orono, Maine; J. W. Kerr, Denton, Maryland; W. C. Strong, Waban, Mass.; C. J. Monroe, South Haven, Mich.; J. J. Evans, Harlem, Missouri; C. C. Shaw, Milford, New Hampshire; Ira J. Blackwell, Titusville, N. J.; F. M. Hexamer, New York City; J. Van Lindley, Pomona, North Carolina; Howard A. Chase, Philadelphia, Pa.; George E. Morrell, Fontella, Va.; F. A. Waugh, Burlington, Vt.; H. W. Miller, Pawpaw, West Virginia.

The program was now taken up, and C. B. Brackett, Pomologist, U. S. Department of Agriculture, gave his address on "American Horticulture in Paris in 1900." He spoke of the desirability of the American people making a good exhibit at the exposition. Such an exhibit will show foreign people the quality of American fruit, and will help to open the markets to us. Arrangements should be made with transportation companies for providing cold-storage for the fruit which is to be exhibited, so it may arrive in the best condition. There should be a considerable surplus sent, so the exhibit can be kept in good condition all the time.

Mr. J. W. Kerr, Denton, Md., read a paper on "Evils of Prevailing Methods in Marketing." Mr. Kerr thought some of the evils in marketing might be avoided by producers selling in car lots at home. They can put their goods on the track at their railroad station, and ask the city dealers to come and buy them.

Mr. J. H. Hale said the buyers would not pay as good prices when buying in this way. You cannot pack fancy fruits for a special market when selling to one dealer in car lots. This plan may do for the western growers who produce large quantities. Those who grow fruit in smaller quantities must patronize the commission dealers. I know that many commission dealers are hard working, honest men,

and they will do as well as they can with the produce, if the quality is all right. When you have found a good man, send him good goods, and stay with him. If your goods are handled for several years by the same man, they will get a reputation, and it is the reputation your goods have which will make sales for you.

Mr. R. M. Kellogg spoke of the reputation which the peaches grown by Mr. Roland Morrill, of Michigan, have acquired. He said that one commission merchant had always handled his peaches, and buyers always asked for Mr. Morrill's peaches, and would take no others. This shows what can be done if goods of the highest quality are sold at the same place for several years.

Prof. Alwood, in reply to questions concerning the pollination of apples, said, "I advise the mixing of varieties by an inter-space system of planting, but usually, I think the failures in apple culture are due to other causes than pollination. Very thorough pruning, within limits, is one of the best things to restore non-bearing orchards. Impotency of buds, more often, is the result of lack of vigor in the trees. The remedies are, fertilizing, cultivation, and pruning."

Prof. John Craig, Iowa Agricultural College, in his talk on "The Results of the Freeze of 1898-99 in Iowa, said "Each variety has its thermal death point. We found the trees are the most liable to be killed when they are in a hard un-worked clay soil. When growing in a well cultivated, light soil, the trees were less injured. We also found the trees in much better condition where the roots were mulched, and we recommend mulching as a preventive against injury from severe freezing in winter."

The committee on the awards of the Wilder medals, the only prizes given for the exhibit of fruit, consisted of Dr. F. M. Hexamer, New York; H. E. Van Deman, Virginia; John Craig, Iowa; and A. G. Cully, Connecticut. The report rendered, was that the awards of silver medals be made as follows: To the New Jersey State Horticultural Society for the large and highly meritorious display, comprising 696 plates in twelve different classes; to Ellwanger & Barry, Rochester, N. Y., for 100 varieties of pears; to the Arkansas Experiment Station for excellent display of apples, including fifteen varieties of seedlings; to the Michigan Sub-Station, South Haven, for its educational exhibit; to Pomona Nursery, Parry, N. J., for its fine collection of nuts; to Roland Morrill, Benton Harbor, Mich., for unique exhibit, showing the results in peach growing from following the most approved methods of culture, illustrated by specimens of fruits, and accounts of sales; to John Charlton, of Rochester, for Charlton Grape, a cross

of Brighton and Mills, and combining the qualities of both.

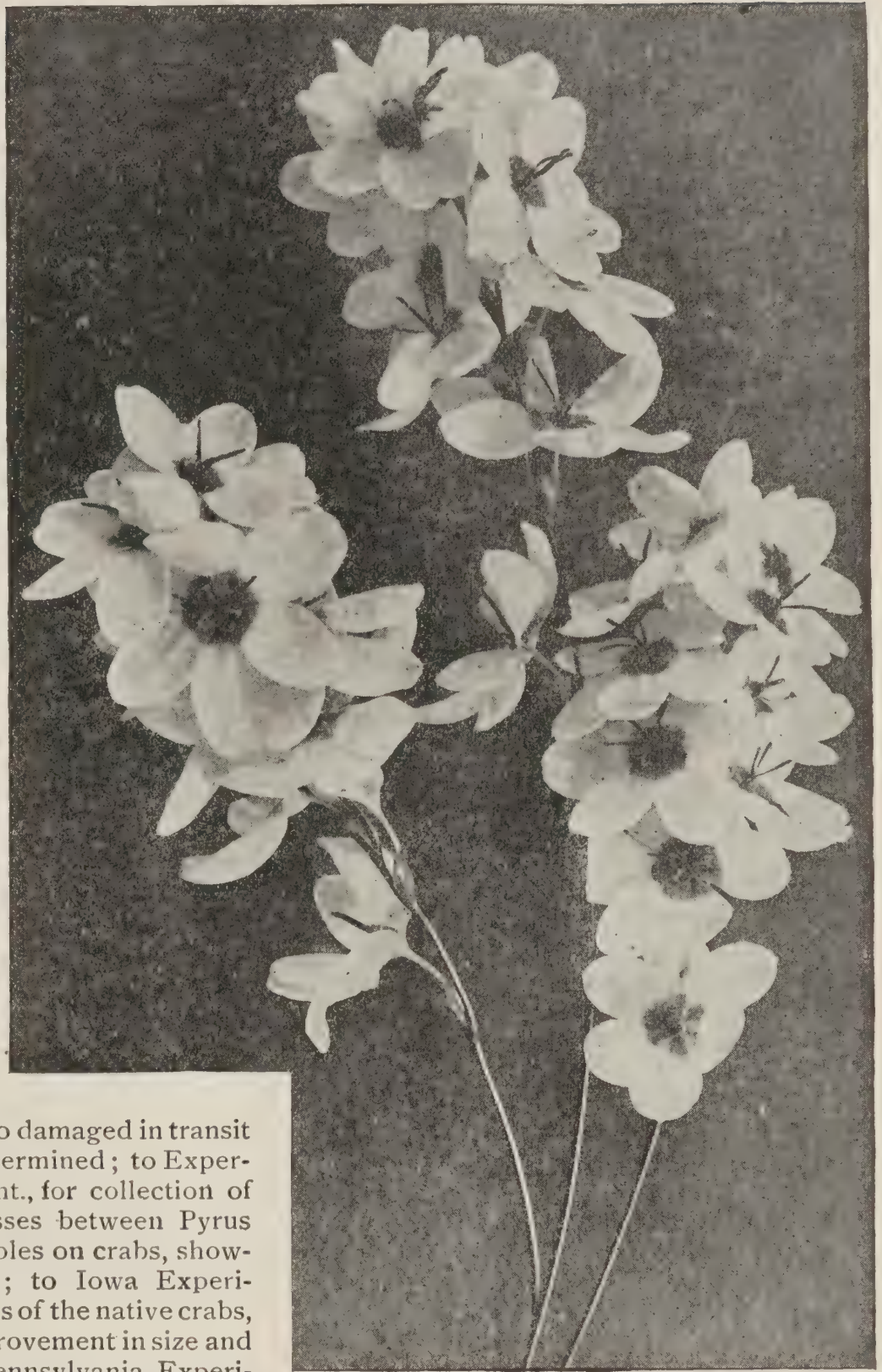
Bronze medals were awarded to C. L. Watrous, of Iowa, for collection of native plums, including the newer varieties; among these were the New Ulm, Buroota, Brittlewood and Silver. To Howard Chase, Philadelphia, twenty-four plates of apples, six plates of pears, and two of apples; to George E. Morrell, Fontella, Va., for thirty-one plates of apples, one plate of quince, and one of grapes.

Honorable mention was given to Peter Peterson, for forty-two plates of fruits and nuts; to W. B. K. Johnson, Allentown, Pa., for thirty-five plates of apples, pears and quinces; to the New York Experiment Station, Geneva, for collection of native plums; to Lyman Phelps, Sanford, Fla., for collection of Japanese persimmons; to Luther Burbank, Santa Rosa, Cal., for grapes and seedling apples, but so damaged in transit that merit could not be determined; to Experimental Farm, Ottawa, Ont., for collection of fruits, resulting from crosses between *Pyrus baccata* and cultivated apples on crabs, showing remarkable variation; to Iowa Experiment Station, for specimens of the native crabs, showing considerable improvement in size and form over wild type; to Pennsylvania Experiment Station for collection of thirty-five plates of apples and grapes; to Greening Bros., Monroe, Mich., for Banana apples; to C. C. Corby, Montclair, N. J., for Corby grape and Montclair grape; to C. R. Hartshorne, Brighton, Md., for Bloomfield apple.

Dr. Hexamer, as chairman of the committee on new native fruits, mentioned as among the most promising apples, the "Canajoharie," "Pride of the Hudson," "Koffman's June"; Peaches, Worcester, Evans, and Dewey.

The present session of the society is notable for the interest displayed by the members, and the large amount and varied character of excellent work accomplished.

W. J.



GROUP OF IXIAS

FRAME CULTURE FOR TENDER BULBS.

THE same time and space that we devote to the pot culture of tender bulbs might be made to produce larger spikes of more finely colored flowers in much larger quantities if we should grow them in frames instead of pots. The window-sills would miss them, it is true, but enough pots for window decoration could be plunged in the frame and then brought into the house to dispense their cheer when in bloom.

The bulbs for which I am advocating frame culture are not quite hardy in the northern

States, and if planted out with tulips and hyacinths, as some of the catalogues recommend, may never be seen again. We need their bright, odd, beautiful flowers to give variety to the regulation tulips, hyacinths, lilies, and narcissus now planted everywhere by scores, and we need flowers of every kind much more plentifully in winter than the system of fussy pot culture will allow.

The excavation for such a frame should be at least fifteen inches deep, and fitted with a box, the sides of which come up level with the ground. Coal ashes or small stones should be placed beneath the box for drainage before the bottom boards are put in. The box must be tight, with no holes large enough for moles and mice to get in, or the labor of making it will have been all in vain.

Almost all bulbs grow best in a somewhat sandy, porous soil, so if that used for filling the frame is heavy it is better to mix with it some coarse sand and leaf mold. It is a mistake to add fertilizer of any kind to the soil in these frames unless old and well-rotted, as it causes the bulbs to decay.

The box must not be filled so full of soil that the taller growing bulbs will be bent by the glass that covers the frame. Six or seven inches of soil is plenty for these bulbs to grow in. Four or five would do. The frame that covers the box will just fit it, of course, and in spring, when all danger of frost is over and while bulbs are yet in full bloom, the frame-top can be taken off revealing a brilliant bed of rare bulbs blooming amid the tender green of the sod.

Among the bulbs that need and well repay the protection of a frame are the sparaxis, tritonias, ranunculus, lachenalias, brodiaeas, the tenderer Cape anemones, babianas, calochortus and ixias. Do not plant them until November or December, lest they start to grow too early and the frost creeping into the frame should kill their flower-buds. For the same reason the soil with which the frame is filled should be quite dry when the bulbs are planted, and be kept moderately dry for five or six weeks.

The calochortus, or butterfly lilies, are exceedingly bright and odd-flowered little beauties, with showy, eye-like markings and blotches in very rich or dainty colors. The babianas and ixias, too, are strangely and richly marked and colored. The latter are especially graceful and fine for cutting, and no bulb that we grow produces flowers in such quantities or for a greater length of time. White, pink, rose, crimson, orange, cream and yellow, are some of the colors in which its flowers love to dress, and in some of them many colors are brilliantly blended.

Plant the bulbs three to four inches deep and about the same distance apart, and do not water them until they begin to grow,—perhaps two months later. If the spring is mild they will begin to flower in early May, and then the bed should be a mass of brilliant bloom for a long time. If the frame is situated in a sunny, sheltered place the flowers will bloom earlier and the sashes will not need so much protection with mats and shutters through the most vigorous winter cold. L. GREENLEE.

* *

THE PEONIA.

THIS old but magnificent flower is not planted nearly so extensively as it deserves to be. In fact no flower is so easily grown, so permanent, or is so free from insects. And no flower, not even excepting the rose, is more beautiful or makes a more beautiful display. A bed of peonies properly prepared will increase in beauty for a life time, enduring with impunity the coldest winters, one of the first plants to appear in the spring. The foliage is beautiful and keeps bright and fresh all summer. By planting the right sorts a succession of flowers may be had for several weeks. While no plants are more easily raised, yet they well repay careful cultivation. They look better in large beds or masses, and each individual plant should be given abundance of room, not less than two or three feet apart. Unless the soil to be used for the peony bed is of a porous nature it should be deeply dug and pulverized to the depth of eighteen inches to two feet—thoroughly incorporating with the soil well rotted manure. One cannot well use too much of this, if well rotted, as the peony is a rank feeder. The plants can be set out with complete success in the fall, planting about six inches deep, and carefully firming the soil around the roots, afterwards covering the bed with two or three inches of short manure. Fall planting is the best unless it can be done very early in the spring. The plants should be well cultivated during spring or summer unless the bed is mulched sufficiently deep with straw or other litter to prevent the growth of weeds. I prefer to mulch them, as they do not suffer from drouth, and the luxuriant foliage conceals the mulch so that is not objectional. No flowers should be allowed to form the first year, and even if you have few the second do not get discouraged. The peony is an exceedingly deep rooted plant and requires some time to become established. Don't forget to give a liberal top dressing of manure every fall. Care should be used in the selection of varieties so as to have as long a succession of flowers and as great a variety of color and form as possible. M. BENSON.



ACALYPHA HISPIDA

ACALYPHA HISPIDA.

THE engraving of this plant presented herewith shows what may be expected of it when well grown. The specimen from which the photograph was taken was one of a hundred or more propagated early last winter by Salter Brothers, of this city, and well cared for in the greenhouse until about the first of September when the picture was taken. The plant then stood about eighteen inches high, and the racemes of flowers about nine inches in length. Has any plant of this kind been seen better than this one, or with longer racemes, the present season? A full description of this species of Acalypha was given in our last

volume, but as the plant is a new one in this country it is desirable to learn from those who have tried it what success has been attained.

* *

THANKSGIVING—ACROSTIC.

The fields of grain are garnered now,
 High-heaped are stack and bin and mow,
 A wealth of fruit the cellars hide,
 Nor is there lack of grain beside.
 Kindred and friends who gather here
 Shall swell the strain of mirthful cheer.
 Great God, to Thee our songs of praise
 In humble gratitude we raise.
 Victorious over foreign foes
 In peace our land triumphant grows;
 No voice but Thine would we obey,
 Grant us Thy blessing, Lord, today.

LALIA MITCHELL.

NATURAL AND FORMAL STYLE IN LANDSCAPE GARDENING.

A VERY interesting article on "Formal Gardens," appeared in the September number of *Harper's Magazine*. The author states that a reaction from city life is taking place in favor of country residences, and as a result the laying out of grounds and gardens is a subject of very present interest, and that



ASTER,
LONG-STEMMED WHITE

there are two distinct methods, the formal and the landscape, differing both in principle and in outward manifestations. This is very true. But after making the statements that "Architecture and Nature represent antagonistic principles" and that, as the house is entirely formal and different as possible from Nature, some degree of formality should embrace

the arrangements of the subsidiary features, when he finally concludes that instead of employing an architect to design the house and a gardener to fumble over the grounds we should intrust both to the architect, I beg to differ with him. The gist of the argument seems to lie in the proposition that in the formation of country homes the architect of the house is the proper person to design and direct the laying out of the grounds. Now let us view this matter in its proper light and see to what extent the writer can maintain such a hypothesis.

In considering the formal style of gardening I frankly admit that for small circumscribed places, like city parks or public squares, very pleasing effects can be produced by adopting the geometric or formal style; this, however, is not landscape gardening and never should be confounded as such, although it frequently is; as the subject under consideration applies more forcibly to country homes than to city parks I will proceed on that line of argument. Supposing a man of means, who has ample grounds desires to improve them by establishing a new home in the country, no matter what the size or the style of the house is intended to be, it is sufficient to understand that it is to become the future home of refined people, and the first step that should be taken in the direction of improvement of the grounds is to consult the landscape gardener or engineer as to the proper location of the house and design for the grounds. The architect of the house is not the person to intrust with this kind of service, for the reason that but few architects have ever had the proper training to fit them for it. A properly educated landscape gardener, however, is not a mere deliver of the soil, nor a "fumbler" of the ground as some people imagine, but a man of scientific attainments and a peer among his fellows. In evidence of this assertion, I need only to refer to two of the most prominent, one the landscape engineer of the first London Exposition and the other that of the Columbian Exposition. I could mention others who have become famous through their work, but these are sufficient to determine the position of the landscape gardener. He is not a person to allow any interference in his plans or permit of the disfigurement of any beautiful natural object for the sake of formality. When the reaction against the formal style began in England and the people had become satiated with a repetition of the various objects or parts which constituted the make up of the formal garden and the enormous expense attending the laying out and maintenance of such places, a few men of

well known taste and refinement were prominently brought into notice as champions of the cause, men of earnest thoughtfulness, among whom were the Rev. W. Gilpin, Mr. Uvedale Price, Kent, Humphrey, Repton and other reformers in the garden style who have made England the beautiful country it is today. In this country in the first half of this century we would mention A. J. Downing, who did so much in his day towards the beautifying of American homes. As to the efforts of these men suffice it to say that the fount from which they derived their inspiration was a thorough and complete study of Nature in all its various forms. Now a word as to the formal style, or the ancient, as it is more frequently called; we will take Versailles as an illustration of the French school; everything that art could accomplish or that money could supply was lavished on these gardens by Louis XIV.; more than 200 millions of francs were spent on these gardens alone which abound in fountains, statuary and other superb works of art; and the chief attraction and glory of all is the tremendous rush of water from the numerous fountains when in full play. But what does all this amount to in comparison with the rapids and falls of Niagara? It is like comparing the squirting of a boy's pop-gun to the hydraulic mining pipe of California, which exerts a force sufficient to even tear boulders asunder. Niagara and Versailles are the two great exponents of Nature and art, and Nature still has and will maintain the supremacy. Notwithstanding the vast sums of money that were spent on the decorations of the gardens of Versailles, they failed to satisfy, and the result was the laying out in the English or natural style of the little Trianon adjoining them. It cannot be supposed by those who have given the subject sufficient thought, that the ancient or formal style of gardening, will ever gain a foothold to any great extent in this country. Americans love Nature too well for that. In concluding these remarks I desire to say that the writer of the article under consideration has called attention to an important subject, and I sincerely hope that it may be further discussed by those who are interested in the formation of country homes. WM. WEBSTER.

* *

GERANIUM FLASHLIGHT.—This new variety is reported to be admirable as a bedding plant on account of its freedom of growth and the profusion of its flowers. The color is a bright carmine and is not affected by sun or weather. The flowers are large and produced on long stems and in large trusses that stand well up above the foliage. A bed of these plants in bloom is a mass of flowers.

HOLIDAY DECORATIONS.

AT this season of the year it is well to look forward a little and to take advantage of the many beautiful things nature has to offer us, which can be used for holiday decorations. The treasures of woods and fields are full of decorative possibilities, and gathering them is one of the dearest delights of the golden fall days. With every basketful of nature's offerings, we bring home, too, what is better and



ASTERS, VICK'S WHITE BRANCHING

of more value, added strength and vigor of body and mind and a store of pleasures which will form ever-recurring and delightful memories until summer comes again. Thus such Christmas decorations will have a sentimental value in addition to their beauty and utility.

The grain-fields offer our first decorative features. Sheaves of wheat are lovely, when gracefully disposed against a background of evergreens. Small stalks of corn carefully dried, with the ears showing from the half-



ASTER, SEMPLE'S PINK BRANCHING

open husks, are valuable for decorating when large effects are desired. Many, and indeed, most of the grasses are lovely dried and crystallized by dipping the heads in a strong solution of alum water, and suspending by the stems until dry. Beautiful letters can be made from these, or from wheat, either used alone or in combination with autumn leaves or evergreens. Ivy leaves make a charming background for sprays, wreaths and other designs of wheat and grasses.

From the seedpods of the milkweed can be made ornaments which do not suffer from a close inspection, as do many decorative effects and consequently they can be used for situations where they may be inspected at close range. Carefully separate the down from the inner core, and bind with very fine wire the loose ends. When shaken out, a lovely pompon of spun silk will be seen, dotted with the dark seeds like rich jewels, if the pod has been opened at the right season; or the seeds may be removed and the pure white pompon employed. Letters made from these on a

background of ivy leaves, *Asparagus plumosus*, or ferns, have a delicate, tremulous, ethereal character possible to no other decorative agent from nature. Milkweed pompons are lovely combined with sprays of oats, wheat, rye, or grasses, which have been sprinkled with mucilage and then dusted with powdered mica. This method of treating grasses, etc., is extremely effective by artificial light.

Pressed ferns are very useful, and particularly so when they have been bleached by light frosts. Sometimes they are to be found in the woods almost cream-white in color. These combine well with pressed maiden-hair ferns, with clusters of rose heps, or the glowing berries of the swamp alder, climbing bitter-sweet, sumac, etc.

The brilliant sumac leaves are valuable and are easily disposed to advantage. Pressed autumn leaves, especially small leaves of the maple, beech and oak, form effective letters, small designs, and painted or stained glass effects. Small sprays of crimson or golden maple leaves are easily pressed, or they may be preserved more perfectly by passing a warm iron over them which has been passed over a cake of wax or a waxed paper,—of course pressing and drying the spray first. All leaves and ferns may be thus treated; the resulting glossy surface is very pleasing.

Cattails have decorative values which will at once be apparent, as have also pine cones of all sizes, especially if they have been silvered, gilded, or dusted with powdered mica, as recommended for grasses.

All sorts of everlasting flowers, both of the pastures and the gardens, are useful either in their natural tints or dyed. The white or cream everlastings are especially lovely when frosted with mica and arranged on a background of dark velveteen.

The berries of the mountain ash and waxberries are lovely in combination with ground pine or other evergreens, as are also the seed spikes of the sumac. The blossoms of the pasture thistle furnish attractive pompons and every country child knows how to make them.

If they can be obtained, holly berries, mistletoe, and mountain laurel are most valuable adjuncts. Cedar, spruce, hemlock, and other evergreens, together with the graceful and all but indispensable ground pine, will form suitable backgrounds and massive decorations of many varieties.

In another paper I will indicate how some of these materials may be made up and combined to the best advantage, though new and beautiful arrangements will constantly be suggesting themselves to anyone fond of decorating for the holidays.

Massachusetts.

MRS. W. A. CUTTING.

ASTERS.

THE past summer was a very trying one for asters. The exceedingly dry weather brought them into bloom much earlier than usual, and the flowers, in many cases, did not attain proper development. They also passed out of bloom much sooner than they would have done had we been favored with the usual amount of moisture.

Some varieties which endured the drouth well and presented a fine appearance the middle of September, were Vick's White Branching, Semple's Pink Branching, and the florists' Long-stemmed White, illustrations of which are given.

Vick's White Branching is a veritable treasure for bouquet makers on account of its free blooming qualities, the long stems of the flowers, and the length of time the blossoms will remain fresh. The flowers are finely formed, pure white, and full to the center.

Semple's Pink Branching is of a most beautiful shade of pale pink. The flowers are long-stemmed, large and full, becoming more chrysanthemum-like as they open. They retain their freshness a long time in water, and the delicate shade of pink does not change its color.

The blossoms of the florists' Long-stemmed White were not as large as those of either of the other varieties, but were of a size that would make them valuable for florist's work, and the long stems and the lasting qualities of the flowers make them desirable. F. B.

* *

STORING WINTER VEGETABLES.

A ROOT-CELLAR or pit is doubtless the best place in which to winter vegetables, but as few of us are fortunate enough to have one we must plan some way of accomplishing the same result with the means at our disposal. Vegetables can be bought so cheaply in the fall that it is a matter of economy, as well as convenience, to store them at that time.

Potatoes are best kept in barrels or bins in a cool cellar of even temperature; they must not be exposed to light for any length of time, as it not only causes them to sprout but greens the skin so they become bitter and unfit for use.

The following plan for preventing them from sprouting in spring will be found useful when many are placed in the cellar for family use; it destroys the eyes or buds, after which they never start, consequently the tubers do not become shriveled and tough: Before placing them in the cellar leave the tubers for an hour in a solution of sulphuric acid, about one and one-fourth pints to twenty-five gallons of water, the whole being thoroughly mixed; after

removing from this bath they should be spread out to dry, then placed in barrels. The solution also prevents decay. Such potatoes will never grow under any circumstances, so those intended for planting should not be so treated.

Such roots as carrots, parsnips, beets, salsify, turnips, winter radish and horse radish should be stored in boxes or barrels, the spaces being filled in with dry soil, a thick layer also being placed over the top. These vegetables do not remain long in good condition if exposed to the air, especially that of a poorly ventilated cellar. They should be kept as near the freezing point as possible, being able to stand more cold when packed in earth and the temperature is also kept more even by its use. Carrots, turnips and parsnips are especially susceptible to changes in temperature and quickly show the effect of too much heat by becoming withered and tough almost immediately after being pulled, after which no amount of cooking will make them tender.

One mistake often made is in pulling vegetables too early; they should be kept until there is danger of the ground freezing, most of them being improved by light frosts which seem to bring out their good qualities and ripen them off properly. All roots should be carefully dug, as, if cut or broken, they will decay, and communicate the decay to others.

Where sphagnum moss is plenty it is often used instead of soil, answering the purpose admirably.

Onions, unless they have been properly prepared, are difficult to keep, but properly ripened off, dug at the right season and dried, as they should be, they will keep well. The temperature must be low and the air dry, as in a warm, moist atmosphere they soon grow and are spoiled. If I had onions to store, not knowing how they had been dried, I should subject them to 100° heat for several days, which has almost the effect of kiln drying. Then place in shallow, slatted boxes, piled one above another, in a cellar well ventilated and kept just above freezing. If this way is not practicable they can be kept in a building away from fire, stored in a bin which has a thick lining and covering of chaff and fine hay. They may freeze solid and the thick covering will keep them so until almost spring; they can be used as needed, thawing them out in cold water. Freezing does not injure them as long as they do not freeze and thaw repeatedly.

Squashes and pumpkins must be brought in before frost, as, if frosted ever so little, they quickly decay. A piece of stem should be left on each. We find the best place for them is on a shelf in the cellar, built close to the floor above, where they are dry and warm and placed so they do not touch each other.

The most popular way of storing the bulk of the cabbage crop is in barrels sunk in the ground, the only disadvantage being that often they cannot be taken out when wanted on account of deep snow or frozen ground. The stalks or coarse leaves are removed and the heads packed closely in the barrel; it is then buried in the ground after being headed up, about three feet of earth and straw being placed over it. The covering is heaped up to run the water off so no moisture can get in and



EREMURUS ROBUSTUS

spoil the cabbage. A plan which seems better for our use is this: Prepare the heads in the same way, then wrap each separately in two or three thicknesses of newspaper, and pack closely in a barrel until all are in, covering with several papers and finally with a board cover. These coverings keep the air away from the cabbage, the temperature is kept even, and when the last head is removed in spring it will be found in as good condition as when put there.

H. M. W.

EREMURUS ROBUSTUS.

THIS plant, of which European journals have for several years given some accounts, appears in the trade in this country this fall, it is believed for the first time. It is a native of Central Asia, whence it was first brought in 1874. It belongs to the Lily family, and has been mentioned as appearing like an immense hyacinth. The engraving here presented gives an accurate idea of the general appearance of the plant when in bloom. It is a hardy herbaceous perennial, having a cluster of tapering, fleshy roots. The leaves which grow in a tuft at the surface of the ground, have a length of thirty to forty inches, and about four inches in width.

From the center of this great tuft of foliage, which is often from two and a half to three feet in diameter, rises the flower stem, reaching to a height of eight to ten feet, and bearing on its upper portion a multitude of flowers, thickly set around, each borne on a small pedicel, and all forming an immense spike three to four feet in length, and containing hundreds and even thousands of flowers. The individual flower consists of six divisions which open well out, making it more than an inch in diameter; the color is a soft rose, or peach blossom shade, with a darker line through the middle of each petal; the well projecting anthers are of a brownish shade, and the ovary is a bright yellow. The flowers have an agreeable perfume. The blooming season commences towards the end of summer and lasts five or six weeks.

The plant is quite hardy but should be given a sheltered place in a well-drained soil, and in winter should, for safety's sake, have the benefit of a leaf covering. Those who are offering the plants for sale this fall state that they require to be six years old to be of blooming age, and such plants are offered at five dollars each, the purchaser to pay express charges.

The seeds of this plant germinate freely and they may be started in the greenhouse, in pots, in light, sandy soil. The young plants should be set in the open ground as soon as frosts have passed in the spring. In the garden the best time for transplanting is early in October.

This remarkable plant will no doubt remain scarce for some time yet, but its striking and magnificent appearance will command the attention of those having in charge large private or public grounds where it will form an attraction of the highest order.

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A VERANDA ORNAMENT.—A half-dozen col-eus, selected with reference to a pleasing blending of colors, and planted in a ten-inch pot, make a very pretty ornament for the veranda.

SOME SATISFACTORY PLANTS.

THE summer is waning, and I begin to take a retrospective view of what has given most pleasure this season among my floral pets. The plants on the veranda have given especial pleasure this summer.

CYPERUS ALTERNIFOLIUS.—One of the most satisfactory has been *Cyperus alternifolius*. It had a large glass globe to grow in, and the lusty green stalks completely filled the circular opening. The soil used was extremely rich, and was kept covered with water. When the winds played with and tossed the delicate "umbrellas," the plant in its glass receptacle with its network of white roots showing through, was one of the loveliest things imaginable.

TUBEROUS BEGONIAS.—A large box containing tuberous begonias was greatly admired. The soil was a very rich, loose loam, and the bulbs were set close together, almost too closely, in fact, for the thick, heavy, hand-large leaves were too crowded for the best effect. Crimson, white, and lemon were the colors used, and the great, waxy blossoms with their tufts of golden stamens, were exquisite;—no, that is hardly the word, for their beauty was of a voluptuous sort, better expressed perhaps by the word gorgeous. After all I believe no one word could do them exact justice. I find them exceedingly tractable, but they do not need much water until the bulbs are fully started into growth, and then they must not be over-watered. They require rich soil and a somewhat shaded situation, sheltered from the wind. They are ideal veranda plants.

A BEAUTIFUL ROSE.—I like to try new things in the way of house plants, veranda plants, and garden plants. This summer I tried a La France rose-bush for the veranda. Such a treasure as it has been! The plant has thriven wonderfully, and the flowers have been exquisite—that is the right word this time—with a soft vividness of tint, and certainly a lasting quality, rare when grown in the open ground. I shall have La France again next summer.

WATER HYACINTH.—I placed a water hyacinth in a small glass receptacle early in the summer, and as it did not appear especially promising it was consigned to the back stoop. Presently it began to outgrow its quarters, multiplying beyond all expectation, and, I was about to say, beyond all reason. But we finally succeeded in overtaking it with our repotting operations, by furnishing it with a small metal bathtub all to itself, where it has spread and luxuriated until it has completely covered the surface, and veiled the sides with its drooping offshoots. Lovely it is with its pinkish-purple spikes of bloom, and curious altogether, with its inflated leaf-stalks enabling it to float upon the

surface of the water. I have seen it by the tens of thousands floating upon the water-ways in Florida. Here we are glad to get a bathtub full of it, and it is an easy matter too.

ACACIA LOPHANTHA.—This has been one of the stock show plants. It stands as tall as the mistress of the house, and with its delicate, fern-like leaves tremulous in the slightest breeze, has made a dainty bower of the most sheltered corner of the veranda. A large century plant at its base has opposed its thick, fleshy, stiff, and cumbrous leaves to the airy lightness of the acacia with advantage to both, like the graceful, lacelike veiling of moss over an old gray boulder.

Acacia lophantha requires a rich, friable soil, well drained, and plenty of root-room. Never let it dry out, and equally avoid drenching continuously with water. Either extreme will cause the foliage to drop. This plant is easily raised from seeds, and is a rapid grower. Scalding the hard seeds hastens the work of germination, which is otherwise a somewhat lengthy process.

PARROT'S FEATHER.—Suspended in a white electric globe, this *myriophyllum* has a fair chance to show its capabilities as a decorative water plant, and nobly has it vindicated its right to the title. Desiring a thick veil of the "feathers," rather than a long one, I have had to keep the plant within bounds by a rather ruinous nipping process. It has rich soil, plenty of water, and full sunlight. It is a water plant, like the cyperus and water hyacinth.

IMPATIENS SULTANI.—This seems to be a plant little grown or known, but it is very desirable. Easily grown, vigorous, and always in bloom, it furnishes a fine touch of color among the ferns, palms, and aspidistras of the shady side of the veranda. Not that it is always kept there, we give it a good deal of sun when it is convenient, but its soft, carmine blossoms, so profusely borne, have an added charm among the cool greens. *Impatiens Sultani* is a member of the balsam family. It is a desirable winter bloomer.

ASPARAGUS PLUMOSUS NANUS.—No plant in the collection has given me so much pleasure as this. Its long floating sprays of most delicate fairy lace-work have softened and beautified every plant in its vicinity. It blends and harmonizes with all other floral forms, as filmy lace beautifies any costume. The sprays are very lasting when cut, remaining fresh for hours without water, and in water keeping for weeks even. This asparagus is one of the most useful and beautiful bouquet greens we have, and it is a strong and rapid grower.

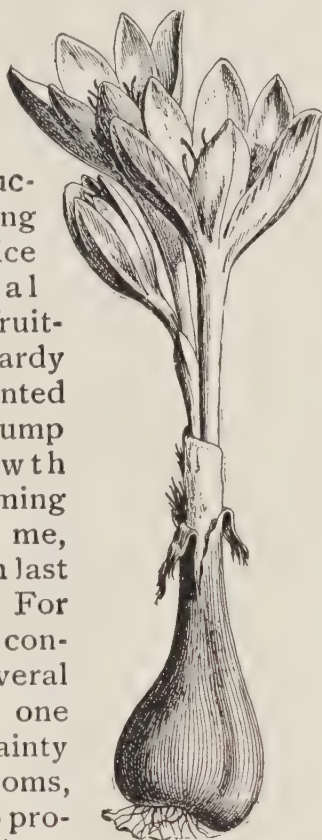
Massachusetts.

MRS. W. A. CUTTING.

COLCHICUM.—A YEAR'S GROWTH.

ARE you acquainted with the autumn crocus, *Colchicum autumnale*? If not, permit an introduction to a plant deserving more than passing notice because of its unusual manner of bloom and fruitage. The root is a hardy bulb which should be planted in early autumn. A clump of several year's growth which has been a charming source of interest to me, showed its first blossom last year, September 12th. For more than a month it continued to bloom, several flowers springing from one root. Very frail and dainty looking were the blossoms, with not a green leaf to protect them from the sharp winds, or to support them in the autumn storms, from which they repeatedly emerged so brave and bright.

In form these courageous flowers are lily-like; in color, a pinkish lavender. The six petals form two sets of three each, about two or two and one-half inches in length, the outer ones being the longer. This outer set unites at the base of the petals, into a hollow, triangular stem, with one obtuse and two acute angles. To the base of each of the three inner petals adheres a stamen, and these widen and join to form another tube within the triangular one. Both of these tubes are of the finest texture, shimmering whiteness, strong and elastic. Within this double sheath stretch from blossom to bulb three pistils. The knife and lens reveal their glittering silken threads folded here and there, without regularity, into loops, some of which are half an inch long. An inch above the base of the bulb these styles broaden and unite into the walls of a tiny three-celled casket, filled with minute, translucent seeds. We seem, as we examine it, to be burglarizing Titania's jewel case. This stem, with its store of pearly treasures, is protected at the base by four very small, ivory tinted leaves. These clasp the stalk like little hands, each succeeding one grasping just above the last, two overlapping and breaking joint with the other two. Into a groove in one side of the bulb is fitted this stem with its dainty wrappings, and bulb and stalk are bound into one by layers of very strong, brown fibre. This is what, by the aid of a sharp knife and a small



magnifying glass, we saw of bulb and bloom on a November day. Soon after this the cheery blossoms drooped their heads upon the frozen earth for a long winter sleep.

The April winds brought to underground dwellers a word—"Awake!" An echo of the Voice that so long ago said, "Let there be." The little Johnny-jump-up heard it, and with crocus and scilla, anemone and hepatica, hyacinth and tulip, hastened to answer in all their bravery of form and color, and fragrance. Bare and brown laid the colchicum clump for weeks, amid the upspringing verdure and bloom. Then came such a growth that it seemed as if a party of changelings had crept into the bulb bed under cover of the winter snows. There were groups of long, lily-like leaves, four of them inclosing a stem which was terminated by what seemed a cluster of fat, conical buds. They came with a rush, as if in apology for their long morning nap. On through May and June they grew and grew and spread themselves, and yet no blossom. About July first the seeming buds began to open at the top revealing each as a three celled capsule, filled with dark brown seed, for number, a multitude. Here then were the perfected leaves and seeds whose embryos we found in the heart of the bulb in November; and here, months after the brave autumn blossoms were dust, we beheld the completion and perfecting of their mission.

ANNA CARPENTER.

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THREE VALUABLE PLUMS.

THE varieties of plums shown in the colored frontispiece, after thorough trial have established themselves in the confidence of fruit growers as varieties of far more than usual merit. They can be recommended for both the home garden and market. The Burbank is a Japanese variety of very large size, yellowish; stone quite small; flesh juicy and agreeable though not equal to the best European varieties. It ripens early, and this year the crop from the orchard of Mr. S. D. Willard, of Geneva, N. Y., who kindly supplied all the specimens for the colored plate, had been picked close and sent to market by the 24th of August. The Burbank tree is a vigorous grower, hardy, remarkably productive, and commences to bear when quite young.

Monarch and Grand Duke are of English origin, being productions of the late T. Francis Rivers. The Monarch is a noble fruit, of high quality, valuable as a dessert fruit or for canning. Tree a good grower and quite productive, fruit ripening in mid-season.

Grand Duke is a fine, large, late variety, of prune form, ripening in this region the latter part of September.

PROPAGATING LILIES.

THE sunlight of a golden October afternoon was sifting through the yellow foliage of the basswoods and shining on the crimson leaves of the flowering dogwood, *Cornus florida*, that I planted some years ago, when I set myself to dig up and remake a bed containing a clump of auratum lilies, a bigger one of tiger lilies, a lot of white crocus bulbs and hardy gladiolus. The auratum had three flowering stems this year, and as I carefully removed the soil from around them I began to find little bulblets growing upon their sides an inch or two below the surface. A careful sidewise pressure with the thumb pushed them off and I went on digging until the main bulbs were in sight, a foot, or nearly so, from the top of the ground. When counting up, and including one or two which had slender stalks of their own, I had twenty small bulbs which I set, one in a place, in another bed.

When some years ago I finally succeeded in establishing the auratum lily and saw the little plants coming up round the old one, I imagined I was going to have a host of them. But I didn't get them; the auratum left to itself does not spread well, it has been so with me at least, and I think I know the reason now. Suppose a lot of little offsets left at various depths by the decay of the annual growth; before they can grow much the great bulbs below send up their strong stems, an inch or more through, which proceed at once to fill the soil with a mass of annual roots, as thick almost as the straws in a broom, for six inches or so above the bulb. These interlacing fibres suck all moisture and fertility from the soil, and the young plants are choked out.

If I had dug down and got them every fall I might have had a hundred auratums by this time, and what makes me saddest is that I didn't know enough to do it. The main bulbs were not disturbed at all and the stems are still standing. Having read that manure should not come near an auratum bulb (pure fudge, probably,) and wishing to amend the exhausted looking soil in some way, I filled the hole I had made with fine black chip dirt. Then I smoothed off the bed, removing the tiger lilies and gladiolus, reset nearly 200 crocus bulbs and placed an inch of fine cow manure over the whole bed and thus ended up the season's operations.

Next I went at the "golden candlestick" lilies (*elegans*, *umbellatum*, *Thunbergianum*) or something to that effect, an early flowering species, scarlet and yellow tinted, with upright black spotted flowers, making an immense display. These were more shallow rooted and I soon had over 100 bulblets, with any quantity from the tiger lilies. The auratum

once established seems as hardy and easily managed as the tiger lily, growing and blooming year after year as a perfect matter of course. I imagine the bulbs from Japan are at the bottom of its bad name for reliability; the long voyage or something is too much for them. Get home grown bulbs and I think you will succeed better. E. S. GILBERT.

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DRACENA INDIVISA.

DRACENA indivisa, is also known as *Cordyline indivisa*, and from its graceful habit of growth it is popularly known as the Fountain Plant. It is one of the most useful of the genus for the amateur cultivator, as it will give very satisfactory results whether grown in the greenhouse or window garden during the winter season, or in the open air during the summer months. As it is of rapid growth and not affected by insect or other pests, or sudden changes in temperature, for general decorative purposes it cannot be excelled. It is a native of New Zealand. When properly grown and cared for it is a beautiful plant, the dark green leaves being from one to two feet in length, an inch or two in width, tapering to a point, rising and bending over in a graceful arch.

This dracena should be given a compost of turfy loam and one-third well decayed manure with good drainage.

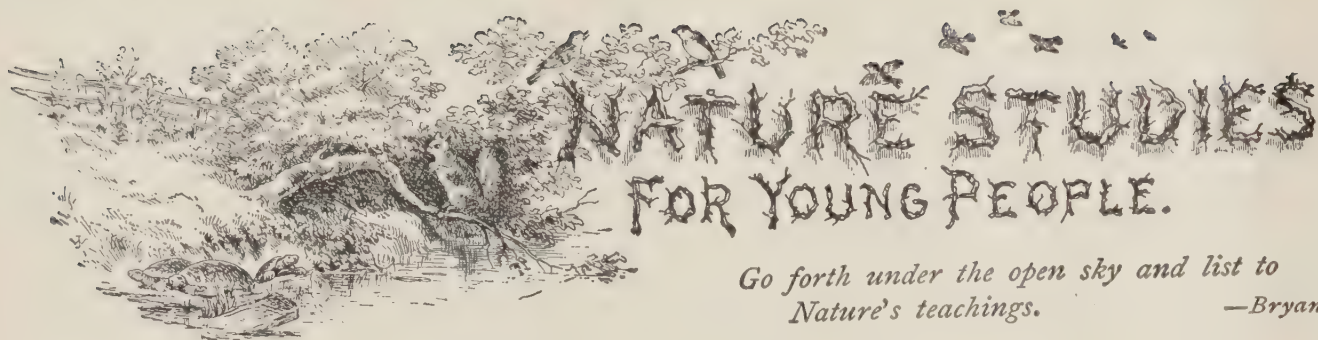
During the winter season, or from October to May, the plants should be given as light and sunny a situation as possible and a temperature of from 50° to 60°, and if the pots are well filled with roots a little liquid manure may be given occasionally. The plants should also be frequently sprayed or sprinkled to keep the foliage free from dust and insects. During the summer months the plants do best plunged in a partially shaded place and properly supplied with water, both overhead and at the roots. The pots should be turned occasionally to prevent roots forming outside, and the plants should be repotted in autumn before they are brought in.

Nice specimens can be bought at a very moderate price, and if properly cared for will do duty for many years, increasing in size and value yearly. CHAS. E. PARNELL.

Floral Park, N. Y.

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NATIVE PLUMS.—In the northern States of the Middle West, Minnesota and the Dakotas, the varieties of plums derived from the native species are most desirable, on account of their hardiness. For general planting Aitken, De Soto, Forest Garden, Rollingsstone, Surprise, Weaver, Wolf and Wyant are regarded very favorably both for market and private garden.



*Go forth under the open sky and list to
Nature's teachings.*
—Bryant.

PLANT ADAPTATIONS.

The first plants were probably unlike any that exist now, but were forms in which the animal and plant characteristics had not been so thoroughly differentiated, and in the process of evolution there have been many changes in structure and habit. Adaptation is the key-note of organic life. Plants have penetrated every region. They are found in snow-drifts, in the tropics, encroaching upon the deserts, in the air and in the water. A plant that is not wanted in a garden may aerate a pond, or decorate a river bank in a way that no mere gardener could aspire to, and the greatest vagaries of form will be found in uncultivated places where vagabond plant tendencies have had full sway.



FUCUS NODOSUS OR
ROCKWEED

Some of the simplest plants are found in the water where conditions are less variable and where the density of the medium is great enough to support delicate tissues, making the complicated structures of land plants unnecessary. There are whole plants that consist of a single cell, which must be looked for with the microscope. Some, like *spirogyra* grow lengthwise, forming one cell at the end of another until there is a long threadlike plant, all parts of which are alike; others broaden out into larger surfaces that are, perhaps, too heavy to float well, and may develop little air-bladders to buoy them up. The common rockweed of the Atlantic coast is one of these. As the plants leave the water they need to have greater rigidity, and tissues become differentiated to form supporting parts.

Looking over the vegetable kingdom we see plant societies or cliques which have pro-

nounced characteristics, are exclusive of others and allow no infringement of membership. There are amphibious plants that can hardly choose between the water and the land and usually compromise the matter by living in a bog.

There are air-plants that can surpass all that is known of the practice of synthetic chemistry in evolving tangible substance from the elements. Perched on some convenient support, disregarding plant traditions of making a livelihood from the soil, they form themselves of materials taken from the air.

Other plants with murderous propensities entrap incautious insects to their final destruction. Some of these, such as the sundew, kill their captive by direct methods, others, like the gods, first make mad those whom they wish to destroy, and give their victims some sort of intoxicating nectar, that renders them helpless, and, it is to be hoped, makes their final going off less painful.

Some plants, finding it easier to steal a living than to make it, have taken to parasitism. They modify their roots to haustoria and attach themselves to some plant which serves as a



ONCIDIUM
AN ORCHID GROWING ON BARK OF A TREE



BRANCH OF OPUNTIA, OR
PRICKLY PEAR CACTUS

host and draw their nourishment from it ready-made. The plant that shirks its duties in this way degenerates, the working mechanism of leaves and roots is largely superfluous and consequently is dispensed with more or less. A good example of this is furnished by the dodder which has become reduced to stems and flowers. This plant frequently grows in clover fields and elsewhere and damages or kills the plants upon which it takes up its abode.

Plants that have made their home in desert places show adaptations that specially fit them for life in these climates. In such a region, loss of water must be carefully guarded against, and as leaves afford a large surface for evaporation, a reduction of this surface will give protection. The cactus is a good example of a plant with reduced leaf surface. Covered with a green rind instead of leaves, and armed with prickles it is prepared to defy marauders, and the hardships of desert life.

The stem serves to hold the floral structures up where they can get air and light, but when it is not strong enough for this the difficulty may be overcome by clinging to something sufficiently rigid. In some plants there are certain specialized portions that can feel for a support and cling to it, and these may be classed as climbing plants.

Other forms preferring the ways of darkness have withdrawn from the surface and pursue their career underground, only occasionally sending up some fragile sign of their life below. The toadstools and the puff balls are the products of such subterranean activity. The study of geological records, and experiments with seeds, show that changed structures follow changed conditions. One of the cypresses that used to grow in dry places has been crowded into the swamps where there is not free access to the air needed for root growth.

The extra aëration is obtained by means of a special development called "cypress knees." Seeds of this cypress grown in dry soil revert to the original type without knees.

The great diversity found in structure and habit has resulted after ages of struggle for development. Change is the law to which all must conform and in many cases where the conditions of life have changed too rapidly, plants have been unable to adapt themselves and death has been the only alternative.

E. M. BRACE.

SIMILARITY UNDER SIMILAR CONDITIONS.

The well-known English botanist, Mr. George Henslow, in a communication to the *Gardeners' Chronicle*, a few months since, gave numerous instances of resemblances, both in animals and plants, of species widely different. His object, in the array of facts presented, was to show that the cause of the resemblances was not, as some have interpreted them, because of any protective value to the subjects, but "that similar habits of life have produced similar results." Or, as our American botanists would say, their peculiarities of structure and appearance were dependent on, or the result of, ecological conditions. By the way, what a pity that this word *ecology*, with its derivatives should be so overworked, as it is at the present time in biological writings. Our friends should consider its tender age, for it is still young, not being found in the *Standard Dictionary*, and should allow it to grow to maturity without being stunted by hard usage. But this is a digression.

In deserts a succulent or spinescent character prevails. Thus the stems of cactaceæ of Mexico resemble the fleshy stemmed euphorbias of North Africa and the stapelias of South Africa; while agaves are like aloes, etc.

Similarly, in climbing plants, the tendril of a pea looks like that of a vine; but while the former is made out of a compound leaf, the latter is a metamorphosed flowering branch.

Again, the minute adpressed leaves of thuya, cupressus, etc., are "mimicked" by alpine veronicas of New Zealand, as well as by plants of the Antarctic regions. The cause is the similar climatic conditions supplied by the localities where they grow.

Numerous other cases of resemblances were noticed by Mr. Henslow but our space will not now permit their presentation.



TAXODIUM DISTICHUM, BALD CYPRESS,
WITH AERATING ROOTS OR KNEES



RUST DISEASES.

Rust diseases of plants are becoming very prevalent, but the general public have not yet found out the remedy.

These diseases take many different forms, but in all of those experimented with in this section, they have yielded readily to Bordeaux mixture if applied in time.

It is also necessary to burn all infected foliage and wood to prevent the spread of disease, the spores living over winter in any refuse around the plant. These spores readily float in the air, attaching themselves to any plant which is in condition to receive them.

A strong magnifying glass will show the spores in great numbers on the foliage of infected plants.

A form of disease often seen is strawberry rust, which affects the foliage of the plants, giving them the appearance of having been burned in spots. It usually appears during the fruiting season, and often by the time the crop is gathered the field looks as if a fire had run over it. In such a case, the first thing to do is to mow off all the foliage and burn it, and if a fire will catch readily in the field, let it run over the remains of the plants, thus effectually destroying the spores. Thorough cultivation of the field with careful attention as to fertilizer, will bring the plants out all right, and an occasional spraying with Bordeaux mixture will do the rest. Early in spring the spraying should be done about three times at intervals of two or three weeks.

Rose rust has been troubling those who grow roses in quantity, but little complaint has been heard from small gardens. It assumes a different form, showing itself in bright colored spots on the foliage, growing gradually larger until it causes the death of the leaf.

After it gets late in the season it is useless to try to stop the progress of the disease, as foliage so badly affected cannot be cured. The only thing to do then is to prepare to keep it in check the next season, by pruning out all old and diseased wood, raking up all refuse under the bushes and burning every scrap of such refuse, as in that way many of the spores are destroyed.

Mulch with fresh litter and in spraying spray

the bushes several times, at intervals of two weeks with Bordeaux mixture, also spraying the earth and mulching under and around the bushes.

Hollyhock rust has become quite well known, in many sections having killed the plants out entirely. Last winter was an unusually severe one here, and all the hollyhock plants were killed. I notice that the new plants raised from seed this year are entirely free from disease, but we cannot hope the cure will be permanent as plants of blooming age are always more susceptible to the rust than younger ones.

Currant and gooseberry bushes are similarly affected, and before the Bordeaux mixture was known the culture of both was almost given up in some sections; since a remedy is known bushes are again being set out.

It must be borne in mind that the Bordeaux mixture is not so much a cure as a preventive. The best rule to follow is to spray early in spring before growth commences, and afterwards repeat several times. H. M. W.

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ROOT APHIS OF ASTERS.

Another summer's use has still further demonstrated the value of kerosene emulsion for the root aphis of asters. This year the bed prepared for the asters was thoroughly soaked with diluted emulsion; it was then left to dry out sufficiently to allow the ground to be worked over, then the asters were transplanted. As soon as they were growing well, another application was made, and another when they commenced to bud. These applications, it must be noted, were thorough, the ground was soaked until the roots of the plants were reached.

It would, perhaps, seem a great deal of trouble to make and apply the emulsion so many times, but the result has more than paid for the trouble, which in reality has been slight.

Many speak of the emulsion as troublesome to make; I find it very easy by the following method: A bar of common washing soap is dissolved in a quart of water and allowed to boil, then two quarts of kerosene are added to the boiling soap. This is churned, while hot,

with a revolving egg beater; a force pump would be better but I do not own one, and a beater answers very well. When the emulsion is properly made it will come like butter, so thick that the beater will not work. A pint of the thick emulsion is diluted with eight quarts of water, making a liquid resembling skim milk in color but closely related to kerosene in odor.

A neighbor has used a strong decoction of tobacco with good results. It would seem that whatever will kill the plant aphid, will also conquer the root aphid. From complaints made in different parts of the country, however, I think that some leaf blight or rust is troubling the asters, but in this section aphid seems to be the only trouble.

I. McROSS.

Wisconsin.

* * *

AT LAZY LAWN.

What people do who have no convenient dung-heap and a horse and buggy to go into the country for earth, is what perplexes me, for I depend so entirely upon these two helps in the care of plants. I have brought basketsful of earth home in the buggy half a dozen times this summer, going four or five miles for it, as I must also go for sand. I mix soil with sand and friable manure, in the right proportions, and use for all my plants. It is astonishing how much I use. I have potted and repotted 150 pots of plants this fall,—the result is, every window in the house is full.

One of my conveniences is a bench three feet long, three feet high and two feet wide, with a three-inch edge around it. In this I mix the soil and pot the plants; it sets under a porch, out of sight, and I could not get along without it. Another convenience is a can of green paint and a brush handy; I've just finished freshening up the wire stands and the iron stands which hold my plants in winter. I do not paint pots,—I like them porous best. I buy cheap, plain pots with saucers and they are more satisfactory than the fancy, high-priced ones. The four-inch pots cost twenty cents a dozen, and the five-inch pots twenty-five cents, and so on in size; I have six ten-inch pots filled with big plants.

The south bay is eleven feet long and six feet deep, lighted with five windows, one east, three south and one west. On the floor I have a neat, dark oilcloth, which comes out into the room; where it joins the carpet I lay a fur rug. Two iron brackets of five arms each, are on each side of the middle south window, and at the east window is a circular wire stand; at the west a straight wire stand. In the center of the bay is an iron stand with shelves below, and two small stands hold each respectively a big fern and an umbrella plant;

these stand at the sides of the bay. Thus arranged I have about seventy-five pots without crowding.

At an east window a big plant stand holds about thirty pots, and twenty geraniums have quarters in the kitchen window. The rag-tag, bob-tailed odds and ends are in an out-of-the-way northeast window.

Until very cold weather the parlor where the bay and east windows are will not be heated, and the plants seem to enjoy the cool atmosphere. The cacti roost on a wire shelf high up in the bay, and the lilies go down cellar until February. When they and the bulbs come up there will be a "shoving and a pushing" in the flower kingdom. There are plenty of windows, but the difficulty lies in heating



AT LAZY LAWN
THE SOUTH PORCH

the rooms during the severest part of the winter. However, when 28° below zero occurs I shall sit up nights and watch both fires and plants, for fifty dollars' worth of plants is too much to lose through a little cold weather. But for all the care and time expended upon them one is repaid a thousand fold by the interest in them and the flowers they give forth.

GEORGINA G. SMITH.

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"FORMAL GARDENS."

I read the article in *Harper's Magazine* on "Formal Gardens" because I was anxious to see what the conception might be. I found nothing of gardening—only some stone work, walks, and a clipped hedge now and then.

JAMES MACPHERSON.

ACACIA LOPHANTHA.

Once upon a time the great U. S. mail brought to a certain door five, black, bean-like seeds labeled *Acacia lophantha*. They were planted in dirt and ignorance, but one grew, sprouted like a bean. Then two fern-like fronds came out, then four, then six, and so on until there were ten or twelve of them in each leaf. Each frond was made of two rows of ten or twelve tiny, round leaflets that go to sleep at night, like the clover, or a row of nestling birds. If the plant were not so dainty it would be stately.

It belonged to the eldest son, for the boys of this family have their share of plants, and he watched it, noting every habit and counting every new leaf. Though the plant was said to be a hardy, herbaceous perennial he shielded it from the cold until that cold "snap" which snapped so many plants, when all his care was useless. The plant lost every plume.

In vain was it nursed according to every rule for frozen plants. It never unfolded another feathery frond.

Its place is now taken, not filled, by another, one of three, the result of soaking five seeds in boiling water until they cracked. The operation should be performed for each separately, then one may be sure to hear the tiny "click" which tells that the deed is done.

The boy also learned to keep his plant from the sun, for when exposed to direct sunshine the leaflets fold up never to unfold again, and soon drop off. Now all the neighbors have "Acacia fever."

DAME DURDEN.

* * *

SWEET PEAS.

The question as to the germinating qualities of eastern and western grown sweet peas is attracting much attention and discussion, also the diseases of the plant and the insects which attack it, but one point about which I am anxious does not seem to have been noticed.

Many new varieties of sweet peas have been introduced during the last few years, some of them so nearly alike that only an expert can perceive the slight differences between them, and all having some charm of color or combination of colors, but, are they as sweet as formerly? Have they the dainty but delightful fragrance of the old-fashioned "Painted Lady"?

It has seemed to me many times of late years that while varieties had multiplied and most charming new tints had been produced, they had not the fragrance of our old-time favorites, and this summer I thought I had a verification of this idea. A bunch of blossoms came from prominent florists in this city. They were of large size and of a most beautiful, delicate coloring, but they had no fra-

grance. I am aware that sweet peas lose their fragrance after a day or two, but these were not kept-over flowers; they were freshly cut.

Another bunch of equally beautiful blossoms came from a well-known grower near this city, an expert in their culture. I was charmed with their coloring, but disappointment followed for they had absolutely no perfume; these, also, were freshly cut flowers.

I do not know the names by which these two varieties go, but to me they were but a delusion and a snare.

What do we care for sweet peas if they are not *sweet*? Is it possible that high culture, interbreeding and cross-breeding are destroying the fragrance of the flowers? If so, I hope the efforts of our growers will be towards perpetuating those varieties which are particularly fragrant, rather than producing new ones which are not.

F. B.

* * *

A WINDOW BOG GARDEN.

It is astonishing how seeds will develop and plant life spring up from any collection of rich soil. We cannot tell how the seeds came to be contained in the loam any more than the bacteriologist can tell how the germs came in the space that was supposed to be devoid of all animal life. Yet we find that suitable ground will always give evidence of animal and vegetable life.

A fine illustration was afforded me the past spring whereby a small piece of marsh bog was made to bloom, so-to-speak, like the rose. In April I secured a chunk of marsh sod from the edge of a lake in a grove of tamaracks. It contained a pitcher plant which nestled in a mass of swamp grass, and the piece was taken home and placed in a flat dish in which the plants might be well watered and given the light. Within a week after securing this oddly shaped plant in its chunk of grassy sod, the grass of the year shot up, and there also appeared successively two beautiful ferns of different species, three weeds of no special interest; the small wild strawberry in its delicate tracery, and two kinds of moss showed themselves. In all there were twelve kinds of vegetable life in this piece of bog. The small swamp garden was kept liberally wetted, and the mass has well repaid our pains. All summer the pitcher plant kept sending up the oddly formed leaves, while the mosses thrived exceedingly, and the ferns developed into graceful sprays of living green. Two of the weeds proved rank and troublesome and were removed as they gave no promise of worth, but all the rest of the collection is doing well, and we shall take the best of care of this

bog garden and place it in the conservatory for the winter.

This is a wonderful adaptation for a hanging basket, and as a combined fernery and miscellaneous assortment is ever attractive. After all, the natural attractions are the most interesting, and it is only by the addition of studied art that we beautify our surroundings with cultivated forms.

MORRIS GIBBS, M. D.

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SATISFACTORY SWEET PEAS.

In view of the numerous complaints this year regarding lack of vigor in sweet peas, both locally and as reported in the floral magazines, you may be interested in the enclosed photographs of the product of the "Invincible Mixture" taken on the 28th of August. The pictures do not do justice to the height of the vines, for they run way above the top of the wire netting and the row is badly sagged. In some places the row is over eight feet high, and seven feet six inches in the lowest point, making a very even row. My wife noted eight blossoms on one stem in one case and six in another, while the stems with five blossoms on were too frequent to cause comment.

Andover, N. Y.

J. M. BRUNDAGE.

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EXPERIMENT WITH HARDY VINES.

There is much trouble about hardy vines not blooming until the vines are old and well established, and I think I have solved the difficulty, as wistaria, trumpet creeper and climbing bittersweet have responded nobly to the new method.

Such vines are usually allowed to grow at their own sweet will, climbing higher and higher as long as any support can be found for them, but blossoming sparingly if at all.

But once drag the vines away from their support and let the young shoots reach out into space, searching for something to cling to and not finding it, and the conditions are all changed. Then they have nothing to do but blossom; this fact is one of the principal reasons why so many people are now raising these vines as standards, the flowers being produced so much sooner and in greater profusion.

One wistaria raised in my neighborhood had more flowers on it last season than I ever saw on any three vines all put together, and this is the way the vine was grown.

The season before the house had been painted, and the vine, which was an immense one reaching to the roof of the second story, was taken down and laid on the ground close to the foundation of the house. It was left there all winter and all the following summer; in June it bloomed profusely, but almost no



SATISFACTORY SWEET PEAS

new branches were produced, its whole strength going to blossoms. In September it bloomed again, but sparingly.

A trumpet creeper was torn from its support near the top of the vine, and the ends broken back a little, and it acted in just the same way, blooming more profusely than ever before.

A climbing bittersweet which had attempted to completely cover a long stretch of fence, had its support blown down by the wind last spring, after which it was left to creep over the ground as it pleased; more blossoms were produced in the one season than were usually seen in three.

All these vines make a beautiful appearance when allowed to grow to a height of twelve or fourteen feet on the corner of a building, and then be kept away from further support. The young shoots reach out in every direction, and when in blossom look much more attractive than when the vines are clinging closely together.

H. M. W.

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ASTER DISEASES.

Diseases of the aster have appeared in many places during the last few years, and they appear to be spreading. It is a satisfaction therefore to be able to announce that the study of the nature of these diseases in a systematic manner has been undertaken at the Hatch Experiment Station, Amherst, Massachusetts. As yet, nothing of distinct value has been ascertained in relation to the diseases, but we may hope that in the course of a year or two their true nature may be learned, together with the means of averting them.

WHAT MANNER OF LOVE.

"Yes, I do love flowers," said Mrs. Rough, pulling up an armful of thrifty self-sown annuals to throw on the compost heap.

"Don't you hate to pull them up," I said.

"Oh, these are so common. Everybody has them and they are just the same as weeds to me."

"Perhaps someone would be glad of a chance to take them home to plant."

"Oh, well, I can't wait. Here they go; but I do love flowers."

"Certainly, I must have flowers," said Mrs. Rude, arranging a bouquet of dahlias, pansies, sweet peas and marigolds in a rose bowl, "they seem to rest me." And yet that bouquet set my teeth on edge.

"Johnnie just worships flowers," said a fond mother. "Almost the first thing he ever did was to grab my amaryllis and pull it to pieces, and now he likes to fight roosters with violets and eat rose leaves."

"I could never get through the winter without house plants; they are so cheerful," said another.

"Truly," I thought, as I gazed at the row of skeleton plants, "one would be able to find diamonds in a city sewer, who could find cheerfulness there."

Are these souls far beneath the influence of the flowers or are they in the transition period and will they come finally to understand the true language of flowers so well that they can never tread on one without hearing its cry of pain?

DAME DURDEN.

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THE EULALIAS.

Eulalia gracillima univittata is the most slender in growth of the three eulalias grown hereabout, and might almost be called the invisible eulalia, at least when compared with the showy *E. Japonica zebrina* and *E. Japonica variegata*. Its leaves are dark, but rather dull in tint, strongly channelled, each leaf a little trough so narrow that the whole leaf is hardly larger than a stout twine, ending in the longest and sharpest of points no thicker than hairs. There is a white midrib at the bottom of each little trough, but this is not conspicuous; you have to look twice to see it. There is a whitish bloom on the main stems which will rub off. Like the other eulalias its foliage is hard and tough and sharp-edged, perhaps more so than the others. The wonder is how such long slender leaves can hold themselves up all summer, but they do so easily. They bend gracefully but never break down.

I suppose the flowering panicles are similar to those of the others, but I have never seen

them. I set a plant in the fall of '98 which now, September 25th, is four feet high. It is certainly a fine plant, strong growing, graceful and pretty, but it does not catch the eye from afar as the *zebrina* and *variegata* do, though with greater size and panicles of bloom it may come nearer to doing it.

My big cluster of *zebrina* six feet high (nine feet last year), just unfolding its brown floss-silk plumes, as wide across the top as it is high, is as showy as a clump of *ricinus* or *cannas* of the same size; with its bold mass of yellow-and-green shining leaves bending and swinging with every breath of wind, besides the striped green and white leaves of the *variegata* it is very showy. The *zebrina* gets to be quite a plant in the spring before it shows any of its yellow spots; you might think you hadn't got the right kind for a while, and its foliage grows more and more checkered as autumn comes on. Ordinary white frosts do not affect the *zebrina* or *variegata*, though they will stop the growth of the plumes. No freeze ever cuts down the stems of these plants, in fact, the dry leaves rattle all winter.

All the eulalias are splendid plants of iron-clad hardiness, bearing extreme drought without symptoms of suffering, with no diseases or insect foes that I know of, very distinct from each other and all other plants, tough, enduring, picturesque and handsome. The plumes when dry are of a whity brown tint, in winter bouquets they will last forever. The stem is a beautifully polished reed, about the size of a lead pencil, straw colored, firm and strong. The penholder I am now using is a point of a eulalia stem, and nothing can be smoother or more shiny.

E. S. G.

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TEA CULTURE.

The growing of tea on the Pinehurst estate at Summerville, S. C., began about ten years ago, and the crop for the season of 1899 amounted to nearly 3,000 pounds.

A report on the results of the experiment at Pinehurst has been prepared by Dr. Charles U. Shepard, special agent in charge of tea culture investigations, and will soon be issued by the U. S. Department of Agriculture as report 61, entitled, "Tea Culture: The Experiment in South Carolina."

The report states that, from the results obtained on the Pinehurst plantation, it seems probable that the cultivation of tea can be made profitable in the warmer portions of the United States in two ways. One is by establishing a plantation on the scale of the experiment at Summerville, with capital sufficient to carry the work to a point where the product can be offered on equal terms with teas hold-

ing an established place in the markets of the United States. The other is to grow tea for home use in the farm garden. In either case tea-growing can be undertaken safely only where the temperature rarely goes below zero, and where a liberal supply of water can be depended upon. There is probably no place in the United States where the rainfall is sufficient for the best results with the tea plant, and irrigation should, where possible, be provided for in growing tea. The Summerville experiment was begun on a small scale, but the planting has been gradually increased until now over fifty acres are planted in tea. When the plants arrive at full bearing, the yield should be at least 10,000 pounds.

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GARDEN NOTES.

TRITOMA UVARIA.—I am glad to see favorable mention in your MAGAZINE of the *Tritoma uvaria grandiflora*, and wish to add a good word for it. It is a grand acquisition to our hardy border plants, and shows to the best advantage planted in front of evergreens or white flowering shrubs; the white althæa or the *Hydrangea grandiflora* makes a fine background for its tall flame-colored spikes. It begins blooming in August, and continues until after hard frost. Its foliage is almost evergreen here in Texas, and retains its fresh green color until very late in the season. It readily adapts itself to almost any situation, preferring, however, deep, rich garden soil mixed with sand.

ROBINIA HISPIDA.—The sweet pea shrub, (*Robinia hispida*) is seldom seen, and yet it is one of the most beautiful shrubs grown. Planted near the early blooming spiræas the effect is charming. The individual flowers are sweet pea shaped, of a soft rose color, and produced in wonderful profusion, the long pendulous racemes almost enveloping the bush. It soon attains the height of six or eight feet, is as hardy as an oak, can be grown in any locality. Taking it all in all there isn't a better shrub grown. It is adapted to a wide range of territory, growing from the Great Lakes southward to the Gulf, and from the Atlantic coast far to the west, perhaps to the Pacific. How far north it will succeed is not known, but it thrives well, I understand, in Ohio and New York. MRS. J. S. DUNLAP.

STEPHANOTIS FLORIBUNDA.

One of the most beautiful greenhouse climbers is *Stephanotis floribunda*, on account of its fragrant, white blossoms, deep green leaves and luxuriant growth.

The flowers are borne in clusters of seven to twelve. They are pure, waxy white, and have a most delicious odor, a blending of *jasminum grandiflorum* and *tuberosa*. It is a great favorite with bouquet makers. The leaves are very dark green, thick and leathery.

The vine blooms profusely in early summer, and again in the fall. It is not adapted to window culture, but succeeds well in a greenhouse or cool conservatory. A permanent bed



STEPHANOTIS FLORIBUNDA

should be prepared of turfy loam, about three feet square, and the vine trained on a trellis, or along the frame work beneath the glass. A well-established plant will make a growth of twenty feet or more.

The flowers are borne on the new growth. Cuttings may be rooted in the spring from the growth of the previous year.

The mealy bug seems to be its only enemy, and that must be carefully looked after. Drive the insects off with a stream of water from the hose, a small hard stream of water easily dislodge them; or give them kerosene emulsion, or touch them with a brush dipped in whisky, diluted alcohol, or alcoholic decoction of pyrethrum. F. B.

SOLANUM WENDLANDII.

A strong and somewhat prickly vine, bearing leaves very like those of the wild bitter-sweet *S. dulcamara*, but instead of the dull colored and downy foliage of this species, both leaves and stem are of the deepest, shiniest green. The flowers are borne on a branching panicle like the bittersweet's, only much larger,—the catalogue promises clusters two feet through; the plant set in open ground last spring and exposed to the extreme drought didn't come up to this mark, its flower clusters not being more than a foot across, but no doubt an old well grown plant would easily do it. The polished buds are oval in form, the flowers botanically the same as those of the congeneric potato (*solanum tuberosum*), are deep blue or violet, growing somewhat lighter with age. They are about an inch and a half across, of great substance and last a long time in bloom. The plant will not endure the winter in open ground in the north, but is said to be not very tender, and a most excellent plant for the greenhouse and window garden. My neighbor's plant grew about four feet this season, I do not know how far it will go, much more than this, no doubt. The fruit, if it grows at all in these parts will be a smooth, red, yellow or black berry. E. S. GILBERT.

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HOW I MANAGE CRINUM ORNATUM.

Crinums are among the most beautiful of the noted Amaryllis family. *Crinum ornatum*, with its huge bulbs, immense tufts of long, strap-like leaves, and large clusters of fragrant blush-pink lilies, is in particular a prince among its fellows. It will never be common, for it does not thrive with ordinary window culture. But there is a way to succeed with it nevertheless.

My first one was a \$3.00 bulb, purchased in the days when they were scarce and high in price. It came to me dry, but it started at once into growth when potted. I fussed with it a couple of years. It grew without ceasing. Took up so much room in fact that it crowded a dozen other plants off the shelf to make room for it. But not a blossom. The third spring I turned it out of its pot into a rich, loamy bed, in a situation where it was well protected by a wall from the cold north winds, and there I left it, from that day to this. It has passed unscathed through the hardest winter ever known in this latitude, and has withstood three months drouth uninjured. It has increased to several large clumps, and the provoking thing that wouldn't bloom, coax and feed it as I would in the house, now blooms four and five times every summer. I can conceive of nothing more ravishingly beautiful than an

umbel of its absolutely flawless flowers, large, beautifully reflexed, deliciously fragrant, of the softest, satiny blush-rose, a deep carmine stripe running through each petal. The stalk is so stiff that it bears its huge crown of a dozen or more full blown lilies proudly erect, and a dozen stalks in full flower at one time, is a sight worth going far to see.

The hot sun, that cooks and crisps everything else, just suits it. Sometimes the foliage burns, but the long, dry heat gives the bulb the "ripening off" that every member of the Amaryllis family delights in, and is really the cause of its astonishing luxuriance and prolific bloom out of doors. It rests and ripens up its bulb tissues, and the longer and hotter the rest, the sounder its heart, and the more rapid its growth when it wakes up again. After a good rain, its flower-stalks quickly appear, and in less than a week this fine crinum will be in full bloom.

North of the Ohio river, it would scarcely prove hardy I think. But for Kansas, Nebraska, Missouri and those central western and southwestern States where the hot summer sun makes it hard to grow choice summer flowers, this fine crinum ought to be largely grown. See that it has plenty to eat, or in other words that the soil is rich and deep, and protected from cold north winds, and it will reward you a hundredfold. LORA S. LAMANCE.

Missouri.

* * *

TRADE EXPANSION.

The scheme is afloat to erect somewhere in New York city a mammoth fire-proof structure covering eight city blocks, and to cost about \$25,000,000, for the purpose of bringing together and to place under one roof the manufactured products of the globe. The object is two-fold,—first, to educate the consumer to a realization of America's preëminence in manufacture by a comparison of the industrial products of all nations; and, secondly, to enable the buyer, either native or foreign, to see competing products side by side and thus make his desired purchases without necessitating a visit to the various producing centers themselves.

* * *

SECOND BLOOMING OF PLANTS.

Lupinus, kerria, rhodotypus, *Hydrangea paniculata*, and many other plants have their second blooming often facilitated in this climate by cutting off all flowers as soon as matured, and preventing seeding. *Hydrangeas* often flower up to frost here, when so treated.

Trenton, N. J.

MACP.

FRUIT NOTES.

THE GOOSEBERRY WORM.

This worm has caused great havoc among the gooseberries this season and people are looking for a way to prevent the work of the pest next year.



GOOSEBERRY WORM
Dakruma convolutella.

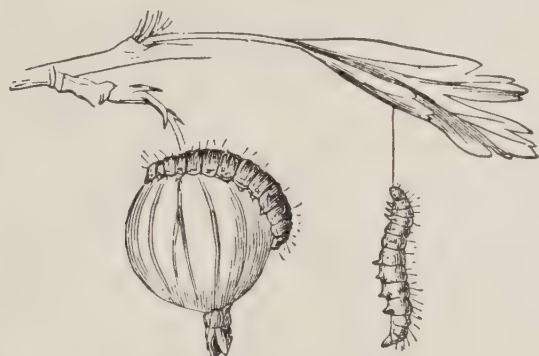
a—Cocoon.

b—Moth, natural size.

The worm * is the one which eats into the berries, each one destroying several of them.

The adult form is a grayish moth, which lays its eggs on the fruit when it is very small; when hatched they go to work at once working into the berries, going from one to another until they become of full size.

They never get to be more than three-fourths of an inch in length, and at that time they spin a web by which they descend to the ground, hiding in the refuse under the bushes where they go into chrysalis form and remain till spring, when they come out as moths ready to go to work once more.



LARVA OR WORM
on a berry, and suspended from a leaf.

The most practical remedy seems to be to destroy by burning all the mulch and refuse underneath the bushes either very late in the fall or so early in spring that the moths will

* The illustrations here presented have been copied from Saunder's "Insects Injurious to Fruits."

In regard to this pest the author mentioned, says: "The insect deposits its eggs on the young gooseberries shortly after they are set. The egg soon hatches, when the young larva burrows into the berry, where it remains safely lodged; as it increases in size it fastens several of the berries together with silken threads, sometimes biting the stems off some of the berries, so that they may be the more readily brought into the desired position, and within this retreat revels on their substance at leisure. The larva makes but one hole in a berry, and that barely large enough to admit its body. When disturbed it displays great activity, and works its way backwards out of the fruit very quickly, and drops part way or entirely to the ground by a silken thread, by means of which, when danger is past, it is enabled to recover its former position.

"When fully grown, this intruder is about three-quarters

not have hatched out. Many will thus be destroyed, and hand picking will do the rest; this latter can be done as soon as the worms begin to work in the berries as they can be easily seen.

H. M. W.

* * *

CUTTING BACK LIMA BEANS AND TOMATOES.

In a late number of the *Rural New Yorker*, Mr. T. J. Dwyer of Orange county, N. Y., states that he cut back both his lima beans and tomatoes to promote early maturity. Abundant rains caused the beans to grow excessively without much bloom. "We went over the entire 1000 poles," he says, "in less than two hours, with a large butcher knife. We pruned them back even with the top of the poles, and any excess of lateral growth was treated in the same manner. In this way we were able to gather beans several days earlier than we could had we not given nature this needed assistance."

The tomatoes were pruned back twice. "We had the first ripe tomatoes to sell in this locality."

"The first pruning was done when the tomatoes were about as large as a door-knob. The effect was almost magical. They grew a little larger, and then ripened very fast. Of course, we destroyed the blossom promise for a lot of fruit, but new blossoms soon formed from the lateral branches, and will come on later. *

* * * The second shortening back was done two weeks later than the first. We found an excessive vine growth again, some of it, in fact, four feet high. Wife and myself went out with our large knives, and went over the 4,000 plants in two and one-half hours."

* * *

THE HOT WATER CURE.

A writer in the *Gardeners' Chronicle*, Mr. G. B. Mallett, records his experience in the use of hot water for the destruction of insects and mildew on plants. He writes as follows: The

of an inch long, the body thickest in the middle, tapering slightly towards each extremity. It is of a pale-green color, sometimes with a yellowish or reddish tint, glossy and semi-transparent. The head is small, pale brown, and horny-looking, and on the upper surface of the next segment is a patch of the same color and appearance. When ready for its next change, which is usually before the fruit ripens, it lowers itself to the ground, and there spins its little silken cocoon among leaves or rubbish, as already stated, and remains as a small, brown chrysalis, within the cocoon until the following spring. There is only one brood of these insects during the year.

Besides the remedies mentioned by our correspondent, Mr. Saunders notes that "dusting the bushes freely with air-slacked lime early in the spring, and renewing it if washed off by rain, will also in a great measure deter the moths from depositing their eggs on the growing fruit there forming."—ED.

degrees of heated water given below may be accepted as the lowest killing power at close quarters; the degree to be raised in proportion to the distance the operator stands from subject under treatment. The water has been applied with a syringe fitted with a fine rose. The temperature given is that of the water in bulk.

AS AN INSECTICIDE.

American-blight on apples.	130°
Red-spider on peaches and nectarines.	140°
Black aphid on peaches and nectarines.	140°
Black aphid on chrysanthemums.	140°
White-fly on tomatoes.	130°
Green-fly on roses.	130°
Caterpillars of sorts on brassicas.	140°
Blight on brassicas.	130°
Asparagus-beetle on asparagus.	150°
Larvæ and eggs of same on asparagus.	140°
Blight on beeches.	140°
Hop-louse on humulus.	135°

STOVE AND GREENHOUSE PLANTS.

For thrips on crinums, eucharis, alocasias, hippeastrums, and numerous hard-wooded plants.	140°
White-scale and other examples of scale insects in a young state on Phaius grandifolius, Lælia purpurata, palms of sorts, and numerous hard-wooded plants.	140°
Green-fly on melons (mature plants), cyphomandra, withanias, and mandevillas.	130°
Mealy-bug on mandevillas and plumbagos.	145°

The only insect I have not succeeded in killing is the "Blue Flea." infesting brassicas; this pest, being provided with wings, and possessing extraordinary jumping powers, does not wait long enough for the spray to reach it.

AS A CURE FOR MILDEW ON VINES.

A slight attack of mildew was totally destroyed on a two-year-old seedling vine growing on an open wall, with water heated to 180° F. The leaves and berries, which had just stoned, were quite free from injury. The berries are swelling freely. Some Muscat vines, raised from last season's eyes, were syringed with water heated to 180° as a preventive of mildew, and they are also uninjured.

Water at a temperature of 160° was syringed on roses to destroy mildew. It was thought that the mildew was killed, but it was found that the foliage was slightly injured.

* *

NATIVE PLUMS IN THE NORTHWEST.

"The Culture of Native Plums in the Northwest" is the title of bulletin No. 63, issued by the Experiment Station of the University of Wisconsin, at Madison, Wisconsin. The author is Mr. E. S. Goff. The whole subject of American plums, including all varieties is very fully discussed. The descriptions, histories and the peculiarities of the varieties are given, and also good illustrations of many of them. It is a very important contribution to the literature of cultivated fruits.

THE PLUMS OF OUR COLORED PLATE.

Mr. S. D. Willard in his account of varieties of plums in bulletin 131, of the Cornell University Agricultural Experiment Station, entitled "Notes upon Plums of Western New York," thus describes the two European varieties shown in our colored plate.

GRAND DUKE.—Originated and sent out in England by same party that sent out Arch Duke and Monarch. Mr. Thomas Rivers has furnished to the world these three of the largest and most beautiful late plums of recent introduction. The Grand Duke is a very large beautiful plum, so attractive in appearance as to be a fine market sort and apparently well adapted for general cultivation over a wide area. Unfortunately the tree is not a strong grower and makes surface slowly on which to spread a crop of fruit. When top-grafted upon the Lombard it grows with more vigor and fruits heavily, but buyers of orchard trees desire only strong growers, hence this variety will come to the front slowly. It ripens from September 15th to 20th at Geneva and can be classed as belonging to the late ripening sorts.

MONARCH.—Fruit very large; roundish, oval; dark purplish blue; perfect free stone. Tree robust, with a dense foliage, and an abundant bearer. In period of ripening a little later than Grand Duke. One of the valuable English plums originated and introduced by Mr. Rivers.

BURBANK.—The same authority, and in the same publication, makes the following statements in regard to this Japanese variety:

A variety sent out by Mr. Luther Burbank, of Santa Rosa, California, and well described in bulletin 106 of the Cornell Experiment Station. The tree is very hardy and vigorous, but the most sprawling in its habit of growth of any plum I have ever cultivated. As regards productiveness, it is unequaled by any plum I have ever fruited. To produce the finest fruit heavy thinning should be practiced. The quality is excellent and it is destined to become one of the most popular of all plums for canning, while its attractive color, good quality and shipping properties will cause it to be sought for as a market variety. It ripens ten days to two weeks later than Abundance. I have had it in fine condition the last week in August and early in September.

* *

CHAUTAUQUA GRAPES.—The grapes of the Chautauqua region are being used this season very largely for making jellies, and for unfermented grape juice, and for wine. The low and uncertain prices for table grapes make their shipment for that purpose unprofitable, particularly the Concord variety.

BUD, BLOOM & SEED POD.

*Nearer to the river's trembling edge
There grew broad flag flowers, purple, pranked with white,
And starry river-buds among the sedge,
And floating water lilies, broad and bright.*

—Shelley.

Clean up the garden.
Hydrangeas to the cellar.
Now we enjoy the evergreens.
Tobacco powder for plant lice.
Dust is a real enemy to plants.
It pays to mulch the strawberry patch.
Hurry the last unplanted bulb into the soil.
Does this MAGAZINE deserve to be clubbed?
The geranium may be killed by overwatering.

Dwarf nasturtiums do very well as window plants.

Are your cactuses at rest? They should be until the early spring months.

Encouraging. Those who fail with almost every other kind of house plants succeed with hyacinths.

Apples should not be too early in the cellar. To barrel them and keep under a shed until December means a better condition of fruit for winter use.

Deutzia gracilis. It seems not to be generally known that this is an excellent house plant. Lift it now, set it in a box or pot, and bring into light and heat a few weeks later.

The beautiful Japan anemones command our highest admiration. They stand forth in their glory after nearly all other blooms have failed, as if to make up for the shortcomings in their garden companions.

The Pingree potato patches in some of our larger cities have decreased weed seed, greatly to the advantage of both city and country. It is safe to say that for every thousand acres of city potato patches there were formerly the same number of acres of thistles and burdocks and burrs.

There is but one way to keep turnips and radishes crisp and solid. It is by having moist earth or sand between them when stored. Sand is mentioned because it is pleasanter to handle than soil, and answers quite as well. There is something about the soil contact of stored vegetables that is not sufficiently appreciated. Celery blanched by soil is much superior to that blanched by the use of paper bands, boards and the like.

Fruit Improvements. Has the height of excellence been reached in our orchard and garden products? We can hardly believe it. We have but to remember that from the wild sour

apple that puckers our mouth, sprung the tender, spicy fruit of our orchards; and from the bitter-fruited almond came the luscious, blushing peach. The improvement is the result of man's co-laboring with nature. Keep up the work and the years to come may yield marvelous results.

PRETTY BUM PEACHES.—Yesterday a Niagara county farmer came into Lockport with a load of peaches, and the same were sold to a Main street merchant. The baskets looked nice upon the surface, but in the "interior" the fruit was of the dwarf variety. The farmer will be prosecuted for this deception.

Must preaching be forever done on the text, "Honesty is the best policy"? Will fruit growers never see the miserable short-sightedness of the course reported, say nothing of honesty on higher grounds? Just look at it. The person who has spared perhaps hard-earned shillings to invest in a basket of peaches and then is duped, is he going to be so ready to invest another time? Certainly not. This is the reasoning. "Yes, they are tempting, but the last basket I bought was almost worthless and I'll take none now." The result is that the price of one less basket of peaches goes into the grower's pocket. Multiply that by a hundred or a thousand and see how soon the fruit-growing community suffers. The worst part of the tale is, that the honest grower suffers with the dishonest.

Weed Law in practice. In Iowa they are thoroughly aroused to the execution of the new law requiring weeds in the highways to be cut at a proper time. The statutes require that if in any case the weeds of lands in the public roads are not cut before the 15th day of August, it becomes the duty of the road supervisor of the township to take the case in hand. In the event that the land owner does not within three days heed the written reminder given him of the law's requirement, then the supervisor shall cause the weeds on such land to be mown, and he shall make return of his bill for the work at a rate not to exceed \$2.00 per day, which shall be paid from the district road fund. The amount so paid is then entered up and levied against the lands on which said weeds have been destroyed, and collected by the county treasurer the same as other taxes. Auditor Millin of Taylor county, Iowa, has stated in the newspapers that the

call for copies of the road law bearing on weeds was so great that the edition became exhausted, after which the same was printed as regular advertising matter in the newspapers of the state. E. A. L.

* * *

CHRYSANTHEMUM NOTES.

Surely it is time for the fashion in 'mums to change, or, at least, to admit of some variations. In the line of the latter I would suggest breaking the monotony of bouncing



CHRYSANTHEMUM
ZORAIDA

incurved and reflexed forms,—so full of petals that you could not find a place for one more,—with the graceful and piquant anemone forms, such as Zoraida, Izanga, etc.

The white anemone-flowered chrysanthemums are especially fine, their great central discs of yellow giving just the needed relief to the fluffy fringes of dead white. Usually these anemones are sturdy and shapely, requiring little coddling.

The young chrysanthemum plants, that we see everywhere over the country through June and July, as a general thing seem to be started nicely and to be growing well. It must be in the later staking, tying, disbudding and

removal to the house, then, that so many plants are spoiled.

It is best to provide for each plant one good stout stake, long enough to be set securely in the soil and reach to the top of the plant. On this the whole plant will depend for its support.

Plants of fine size, intended for specimens need to be carefully tied or looped up to this stake. If a large plant is tied up in a compact mass it will lose some of its foliage, good looks and vitality. We must, therefore, loop up the branches much as they grew naturally, giving the leaves plenty of room to grow still larger if they like.

When plants that have been bedded out in the border show their flower buds, it is time to lift them, unless they are the early, hardy sorts that defy frost. Potted plants that have merely been plunged along the border might stay there a little later, but the earlier they are lifted the earlier they will bloom.

In lifting plants from the border a large ball of earth and roots is frequently thought necessary to success, but it is really a disadvantage because it necessitates a larger pot than the plant really needs. If the mat of fibrous roots can be kept unbroken with a little soil clinging to it, the plant so lifted will grow. This is usually more easily done when the soil is moderately dry than when it is wet.

We are most successful when we use good, rich, fibrous loam in potting, and pots just large enough to hold the roots. After lifting, the plants are watered, shaded, and protected from winds. A good sprinkling of water over the leaves night and morning helps to keep them from falling off. A chrysanthemum that loses most of its leaves is a very woebegone object even if the flowers are pretty.

In about two weeks the shading may be dispensed with, and as soon as the plants are over the effects of lifting they can be staked into shape.

While the buds are yet tiny,—no larger than very small peas,—we begin to thin them. If extra large flowers are wanted only one bud at the point of each shoot is left, and sometimes we thin the shoots, too. The fewer flowers left a plant to perfect, the earlier it can finish the job.

In mild weather the plants must have plenty of air and all the water their roots can soak up.

When insects trouble our chrysanthemums we dose them with an infusion of tobacco, dipping shoots that are covered with tiny mites first into the tobacco water and then into water that is clear. This process repeated several times is usually too much for insects of any sort.

L. GREENLEE.

North Carolina.

LETTER BOX.

Let me have audience for a word or two.

—Shakespeare.

Plant Named.

The plant enquired about by A. W., of Marquette, Mich., is *Bryophyllum calycinum*.

* *

Seeds of Ricinus.

I have a number of plants of the new African Ricinus which are full of seed. I would like to know how to save the seed from them. Should they dry on the plant or not?

MR. H.

At the close of the season the tops of the plants containing the seedpods can be cut off and laid away in an airy place, and when dry the seeds can be removed.

* *

Dahlias.

1.—How many blue, and how many purple dahlias are there?

2.—What is the best dahlia to raise seedlings from?

Voorheesville, N. Y.

L. S. R.

1.—There are no blue or purple dahlias.

2.—That depends on what sort of flower you wish to obtain. The subject of plant breeding is a large one. We can do no better than to advise enquirer to procure and study Professor Bailey's work entitled "Plant Breeding."

* *

Unhealthy Wineberry.

I enclose a leaf of my wineberry (Japanese), on which I would like your advice. For two years the growth of the plant and fruit were phenomenally fine. In preparing it for the winter I accidentally broke the main stalk, but the root remained, and I dressed it carefully, expecting the same rapid growth as before. Instead, it has grown but little, and every slip I took from it died. The leaves are small, and curled under and apparently blighted. Can you offer any suggestions.

E. D. H.

Bath, Maine.

The only suggestion we can offer is to give the plant good care, hoping it may start into good growth next spring.

* *

A Mischievous Root Insect.

The following communication is given with the hope that it may bring out more correspondence in relation to the insect, the work of which is here described, to the end that it may be identified and a full knowledge of it gathered from those who have seen its work, or can give positive information in regard to it:

Please let me know if there is any remedy for a little white bug, I term it a wood louse, which stays below the surface of the earth and attacks the roots and eats them up entirely, of such plants as chrysanthemums and geraniums—they eat up the roots and go up in the stems of the plants eating out the heart of the plant, thus leaving it entirely hollow. This little bug or louse is three or four times the

size of a common ant and shaped like it. It remains in darkness doing its work, giving no evidence of its presence until the plant is ruined. It eats up wood entirely, such as stakes driven in the ground to support dahlias, etc., and will go in pieces of wood which are laid upon the ground and allowed to remain for any length of time. Please let me hear at your earliest convenience and I will esteem it a great favor, as they are destroying all my chrysanthemums.

Morotock, Va.

MRS. E. W.

* *

Plant Queries.

1.—Is it best to cut peony tops off when the plant is through blooming or not?

2.—Should I cut the tops off hardy lilies as soon as they are through blooming?

3.—How old does an Otaheite orange have to be before it will bloom?

S. E. McC.

1.—No. Do not cut them at any time.

2.—No. The old flower stalk may be removed in the fall, or if left alone will separate from the bulb.

3.—Otaheite orange plants bloom when quite young. Plants that dealers send out often bloom the first year.

* *

Leopard Plant Failing.

1.—My leopard plant grew beautifully in a pot on the porch during the summer, but immediately upon bringing it into the house several leaves turned yellow and showed signs of decay. Have since examined the roots, which seem sound and healthy. We use gas; can it be that that has so soon affected the plant? If not, what causes and remedies can you suggest?

2.—Will you please give a list of a few of the best plants for house cultivation, which will endure the air where gas is burned?

E. M. H.

The plant is affected by the house atmosphere; it is one of the plants which are usually successfully raised indoors, and where it fails it may be useless to advise the trial of others. Among plants which are considered particularly well adapted to house culture are *Aspidistra lurida* and *Aspidistra lurida variegata*, and the rubber plant and palms. But it may be that the escaped gas in the house is sufficient to injure even these plants, so they are not advised, but merely suggested.

* *

Mice Nibbling Rose Bushes.

Will you kindly answer in your November number what to do to keep mice from nibbling during winter the bark of rosebushes which have been covered with leaves. Last winter mine were nearly all completely barked.

Buncombe, Wis.

MRS. I. H. G.

Mice are very apt to injure, in the manner stated, trees and shrubs which are mulched or covered with litter or leaves. This evil can be averted. In the first place it is best, particularly with rose bushes and any other small

shrubs, to draw up the dirt around the stems in a mound, so that if the mice do girdle them there will still remain a chance to save them by cutting them off at the place of injury, leaving a portion of the stem long enough to send out new branches. Next, provision may be made to poison the mice. This can be done by mixing arsenic with some cornmeal. This is to be placed at the base of the plant where the mice can get it, and before making leaf covering. A very secure way is to place the mixture in a section of common soil drain tile and lay the tile on the ground. A fruit bottle or glass preserve jar might do as well, leaving the mouth open, and laying the jar on its side. In this way the meal is secured from moisture and is easily accessible to the mice.

* *

Treatment of Various Plants.

- 1.—How shall I treat a Resurrection plant?
- 2.—Will a Fairy lily live out all winter?
- 3.—When should rose bushes be pruned and how much cut back and should last year's growth all be cut out?
- 4.—How should a calla lily be treated to secure best results?
- 5.—What kind of treatment should palms have to keep them growing?

N. W.

Phillipsburg, Pa.

- 1.—This question cannot be answered without knowing something more about the plant.
- 2.—Fairy lily, *Zephyranthes rosea*, should be taken up and the bulb kept secure from frost, in a cool place in the house.
- 3.—Prune roses early in spring, before the leaves come out. Cut away a third or a half of the previous year's growth.
- 4.—Pot in rich soil, keep in a moderate heat, in a good light, and always plenty of water.
- 5.—Palms are not rapid growers. Keep them in the winter in a temperature of 60° to 65°, in a good light, water sufficiently to wet through the ball of soil, and then wait until it commences to look dry before again supplying water. Look them over frequently and carefully and remove any scale insects that may appear. Wash the leaves frequently to keep them clean and free from dust.

* *

Cultivation of Crops.

If not an imposition upon good nature will you kindly advise me through the columns of your valuable MAGAZINE how many times and to what depth it is necessary to cultivate the vegetables listed here below; also at what period of their growth the cultivation should be given?

Cabbage, lettuce, Swiss chard, spinach, mustard, beans, peas, carrots, radishes, onions, water melons, musk melons, tomatoes, sweet corn.

F. J. H.

With most or all of these crops the cultivator should be run three or four inches in depth, and, of course, the work to be done during the early stages of growth. The number of times cultivation is to be given will depend somewhat on circumstances. If a drought should

prevail frequent stirring of the soil is desirable in order to conserve the moisture in the ground. Corn is sometimes cultivated three times, but if the ground is rich and free from weed seeds and timely rains supply moisture so that growth is rapid twice cultivating may be sufficient; and this statement applies to nearly all the crops mentioned. When melons and cucumbers begin to run over the ground cultivation must be stopped, and it will no longer be necessary if it has been well attended to up to that time. So when beans and peas become bushy and nearly cover the ground, at which time the use of the cultivator would greatly disturb and injure the plants, the work should cease.

* *

Winter Care of Monthly Roses.

Four little monthly rose plants which I received last spring survived the summer in pretty good condition. There have been several blossoms, and I am much pleased with them. Please answer through your MAGAZINE, some questions:

1.—Can I take up these roses and put them in pots for winter flowering, and if I do, shall I put them in the ground again in the spring?

2.—If you think it best for them to remain out of doors during the winter, tell me how to protect them, and when to uncover.

I have always wanted monthly roses more than any other plants and I do not want to lose them.

Providence, R. I.

MRS. F. A. R.

1.—Roses are not good plants for house or ordinary window culture, and such treatment for them cannot be advised. If one has a conservatory or a small greenhouse, then, after acquiring the necessary experience, roses might be grown with some success. Some few kinds might even prosper in an enclosed window; but treated as house plants ordinarily are they would not be satisfactory.

2.—Two courses may be pursued in a severe climate in the winter care of tender roses. They may be taken up, removing the leaves, and place them in a box of soil, covering the roots as if planted. In this way they may be kept in a cellar, maintaining some moisture in the soil, until spring and ready for replanting in the open. The other course is to leave them where they have grown, draw up some soil about the stems, and then cover all over securely with litter or leaves.

The best way is to use evergreen branches, if one can get them, laying them over the plants, and then placing a thick covering of leaves or litter over all. It is also a further protection to box around the plants and cover with boards to keep out the wet,—but this is not absolutely necessary. If the plants stand close enough together to be all covered with a large dry goods box, or a similar one, it will afford good protection in connection with the evergreen boughs and leaves.

FAMILY COZY CORNER.

*Some said, "John, print it"; others said "Not so."
Some said "It might do good"; others said "No."*

—Bunyan.

Cozy Corners in the Garden.

One of the greatest attractions in my garden is a honeysuckle screen. A low spreading Seckle pear tree, has long made a shady nook, and to make it more secluded, I caused four posts, each ten feet high, to be set in the ground at intervals of about ten feet, around that part of the tree exposed to the road. A wooden rail connects each post at the top, and serves as a brace as well a support for the vine. Half way down a heavy wire is stretched, a vine is planted at the foot of each post, and as it reaches the top is persuaded to run along the rail and the wire also.

Now, after two years, the wood of the preceeding season has sent out branches which fall in a fringe from both rail and vine, effectually screening the cozy place under the pear tree. Here I have placed a steamer chair, benches and tables, and it is a charming place for an afternoon tea, an idle morning, or moonlight retreat.

Last spring the vines were in bloom for the first time, and to add to the charm and interest, a robin and a chippie each built a nest close to two of the posts, and a little wren hatched her brood in the house at the top of another, at the same time. Visitors did not seem to disturb them, each little mother coming and going with perfect unconcern. Of course I guarded the nests with the greatest care from the beginning, and admitted only a select few to the secret, until the birds were assured of my protection. Near by is a hydrant, hidden by a bed of white fleur-de-lis, and under it I keep a shallow pan, which I fill several times a day with fresh water, and it is no uncommon sight to see a robin, a song sparrow, an English sparrow, and a chippie, all bathing at once in the most amicable manner. Many birds have found the little pool, thrushes, peewees, cat-birds, waxwings, goldfinches, warblers, jays and black birds. To the latter I owe almost entire freedom from snails in my garden, and one who has ever heard the exquisite love-song of the blue jay, will never condemn him to the antipodes when he screams at daylight outside one's window. To hear it, one must be concealed from his sight, but close by. And what a beauty he is! I have met people who believe the jay's cry is that of a cat-bird.

The honeysuckle is such a rapid grower that the most delightfully pretty arrangements can be made with it, and one does not have to wait forever to see them completed.

Two tall Arbor Vitæ stumps stand one on either side a path in the garden, and are covered with the vine. A wooden hoop that formerly belonged to one of the children was cut through in one place, and the ends fastened to the top of the posts. Over this the vine was trained, and now falls in festoons from the arch thus formed. I have started another honeysuckle plant of the golden-leaved variety.

EMILY E. PATTEN.

Poughkeepsie, N. Y.

* *

The Kitchen Window.

Unless you have tried it, you cannot realize what a delight and a comfort a kitchen window full of thrifty geraniums is. Geraniums seem to love the steam and air in a kitchen, and grow better than any place else. Our window is a broad one with a wide sill, facing north. The stove is near it; I have twenty kinds upon the sill and the center cross-piece of the window. In preparing them I slip all my varieties the last of July, sticking the slips in a bed or any place convenient. About the first of September I pot them in four-inch pots and let them go with ordinary garden soil. The less rich the soil, the smaller the pots and the less water you give, the more bloom is produced.

When cold weather sets in the plants are full of buds and ready to bloom. In a winter's time they will grow to immense proportions in that north window, and keep blooming all the while. If the window received the south sun they would bloom more and grow less.

I like geraniums. They are so thrifty and clean and cheerful. I like to know their names, and always call them by their proper cognomen. Senator Allison is a vivid scarlet with a bunch as big round as a coffee cup, every floret opening at once, and few fading for a long time. Rosebud is a rarity, of a rich crimson, double like a little rose. It is the loveliest of all double geraniums. S. A. Nutt is the popular double red, and Athlete is a brilliant single scarlet, each floret an inch or more in diameter. Souvenir de Mirande is an exquisite white and pink striped, single; Madame Bruant is a rosy carmine, single, veined with white; Fleur de Poitevin is a large, single one, of a carmine lake shade, and Trophee is a violet pink, single. J. A. Sallier is another of these exquisite shades, peculiar in the geranium family. Then I have a single and a double white; a very double rose pink geranium, whose name I never learned; General Grant, a double red, flecked with white; and a blush pink unnamed. Three seedling Zonales are beginning to bud, and I am more than interested in them. Mars is a dwarf Zonale and a beautiful bloomer. These fancy colorings are, however, shy bloomers, but all the more valuable.

GEORGINA G. SMITH.

* *

Successful Gardening.

I wish everybody could see the nasturtiums, asters, pansies, and sweet alyssum I have and which I raised myself. Since the first of June we have picked no less than a half peck of flowers every second day, and that means that we left plenty of blooms on the plants besides.

My cosmos, too, is elegant and full of buds.

I never spend more than fifteen minutes a day in the garden, and I give the plants all the care they get excepting the watering, which my brother attends to. Tobacco tea, very strong, I use as a fertilizer and find that it destroys all insects and grubs.

ANNIE LENNOX KINSELLA.

Ohio.

* *

Pilogyne for a Hanging Basket.

Pilogyne is a very pretty and satisfactory vine for a hanging basket. For several winters I have had a beautiful hanging basket—if it may be called so. It was a beauty anyway, although only a leaky two quart tin basin painted red. After filling it with suitable drainage and good potting earth, I planted in it small plants of pilogyne, one oxalis, smilax and trailing abutilon. Every thing grew and grew. It required more and more water, till by spring some days I had to water it twice a day. Every one who saw my hanging "basket" was delighted with it.

Clayton, N. Y.

E. C. B.

* *

Fall Experiments.

When fall came it was simply impossible to let some of the lovely plants go to waste, so I experimented. A plant of ageratum filled with buds and blossoms, was successfully lifted and potted. I sprinkled the leaves and set the plant in a cool, dark place; it never even wilted, but went on blooming.

Snap dragons were treated in the same way.

Two great red-leaved cannas were lifted and they gave my bay a most tropical appearance.

G. G. S.

EDITOR'S NOTES

The Review of Reviews.

The *Review of Reviews* for October contains the first complete account of the remarkable Hearst architectural competition for the University of California, which came to an end September 7th, with the award of a first prize of \$10,000 to the eminent French architect, E. Bénard, and of four other prizes amounting to an equal sum to American competitors. The article in the *Review*, which was written by Mr. H. S. Allen, of San Francisco, is illustrated with perspective views of the prize plans, a portrait of Mrs. Phebe Hearst, whose munificence made the competition possible, and portraits of the distinguished architects who served on the jury of award.

* *

Fair of the N. Y. State Agricultural Society.

The New York State fair held at Syracuse in September was highly satisfactory in the number and quality of exhibits, and also in the attendance and receipts. The display of fruits, vegetables, flowers and ornamental plants was magnificent. In view of the great drouth of the past summer no such display could naturally have been expected, and it told in an unmistakable way of the industry and good cultivation of the gardeners, farmers and fruit growers of the State. Immense displays of fruits were made both by the Western New York Horticultural Society and the Eastern New York Horticultural Society, and specimens of both reached, on an average, a high standard. The Western New York Horticultural was awarded first prize and the Eastern Society second prize.

* *

Seeded Raisins.

The raisin packers of California are yearly increasing the output of seeded raisins, as the fruit so treated finds favorable acceptance in the eastern markets. The fruit is stemmed by passing through a machine for the purpose; it is then partially dried, then heated for three hours to a temperature of 300° F, then transferred to a cold chamber to undergo a chilling process. The alternate heating and chilling renders the small stems brittle and removes them from the berries; it also jellies and preserves the fruit. The raisins are then dumped into a hopper having a fast-moving wire screen and this removes any sand that may be adhering to the fruit. From the hopper the fruit passes to a stemmer from which the raisins come out quite clean. The raisins are then spread on trays and again heated, not only with hot air but with some steam, and in this condition are passed into the seeder which removes all the seeds, and the seeded raisins are then ready to be packed for market.

* *

The Amateur Orchid Cultivator's Guide Book.

This English manual of orchid cultivation of which H. A. Burberry, F. R. H. S. is the author has just been republished in this country, with a preface by Dr. J. M. W. Kitchen, proprietor of Willowmead Gardens, East Orange, N. J. It is handsomely bound in illuminated cloth. The publishers are G. P. Putnam's Sons, New York; Liverpool, Blake & McKenzie.

Three editions of this work have been issued in England, and this statement indicates the esteem in which it is held where it has become known. The present edition has an appropriate preface by Dr. Kitchen referring especially to the different conditions that the orchid grower meets in this country from those in England. It also contains a number of new half-tone illustrations in addition to those of the original work. Four handsome colored plates represent forty-one species and varieties of orchids in their natural colors; in black and white there are some thirty illustrations.

The directions for the cultivation of the different kinds of orchids are here fully and clearly stated, so that a beginner with the book in hand might confidently undertake this branch of flower culture. The cultural directions are not only given with reference to the various classes of orchids but in connection with each species or variety, as it is described. It is shown how orchids may be grown in the greenhouse along with other plants, and full instructions are given in relation to the heating of the house, ventilation, temperature, potting, repotting, treatment of imported orchids, propagation, diseases, treatment of orchids throughout the year, hints to orchid buyers, selections of varieties for small collections. A valuable feature of the book consists of tables containing instructions for the cultural treatment throughout the year of nearly 400 species of orchids. Several pages of "Questions and Answers" supply information on special points that have been brought to notice in actual practice. Altogether this manual appears to be admirably adapted to the wants of the beginner in orchid culture, and is also a valuable reference book for the experienced grower.

* *

Sulphur Fumes Destroying Potato Scab.

A Kansas farmer, Mr. J. C. Norton, has apparently made a valuable discovery in the use of sulphur for the killing of fungus of potato scab. His method promises to supersede the use of a solution of corrosive sublimate or of dusting with flowers of sulphur. He describes in the *Rural New Yorker* his trial experiment which resulted in success. "I burned a very small amount of sulphur in this closed room when it contained about 400 bushels of potatoes. The result was that one variety had the sprouts asphyxiated, and they dropped off at the eye. The others failed to show any signs of sprouting until they had been exposed to the daylight sometime. In fact I became alarmed. For the first time in my life, I planted home grown seed that did not show a sign of life."

THE RESULTS.—The potatoes all came up nicely in a shorter period than usual, and the scab germs were entirely destroyed. The whole crop was free from scab, and he says the cost of fumigation was "less than one cent" on 400 bushels of seed.

It is quite probable that the use of sulphur in this manner will prove effective in the destruction of potato scab, but further trials may be needed to show exactly under what conditions the fumigation may be made without injury to the sprouting of the tubers. Probably some of our Experiment Stations will make such trials at once, and before planting time next spring the method of operating may be fully determined.

* *

A Primer of Forestry.

A very handsome manual with this title has recently been issued by the Department of Agriculture, at Washington. The author is Gifford Pinchot, Forester. The book contains eighty-eight pages of reading matter with numerous illustrations, besides forty-seven full page half-tone plates of tree and forest scenes. It is handsomely bound in cloth, and is a volume which will be preserved in the library. This "Primer" is "Part 1—The Forest," A second volume, "Part 2—Practical Forestry," is in preparation. This first part "deals with the units which compose the forest, with its character as an organic whole, and with its enemies. It may be said to sketch the foundation of forestry and of forest policy." Part two "will deal with the practice of forestry, with work in the woods, with the relations of the forest to the weather and the streams, and will conclude with a brief description of forestry at home and abroad."

All the subjects in "Part I" are admirably treated by a practical and experienced forester, and the appearance of this "Primer" at the present time is opportune, when the care of our forests is one of the subjects of the greatest concern to the commonwealth of the republic.

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The questions of members will be carefully answered. If a personal answer is required, a self-addressed and stamped envelope should be enclosed.

In fact, we hope to make Vick's Volunteers an active, earnest organization, content in times of peace to learn how many unguessed forms of loveliness are all about us; or at the call, make war upon the destroyers of our shade trees, our birds and our flowers.

All communications on this subject should be addressed



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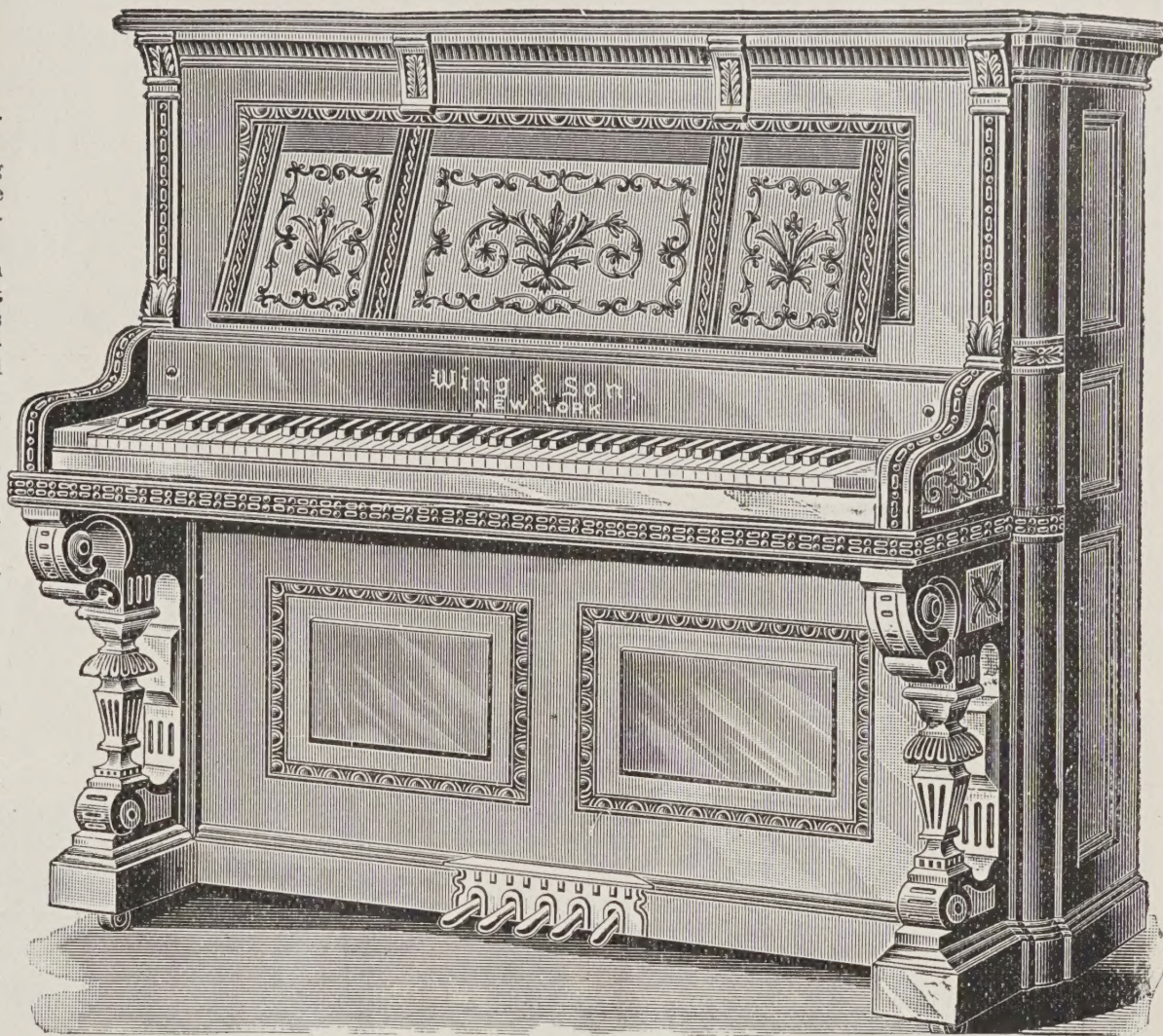
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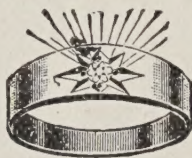
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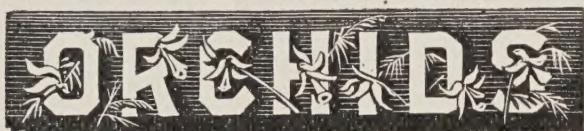
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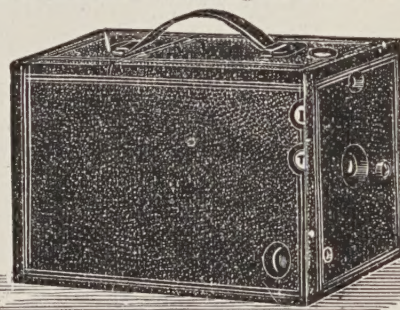
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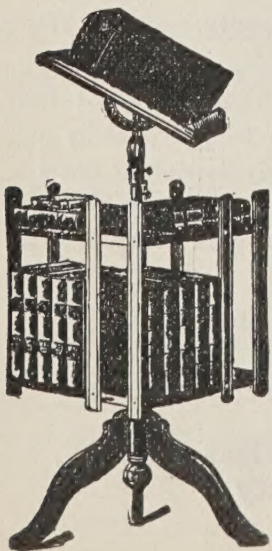
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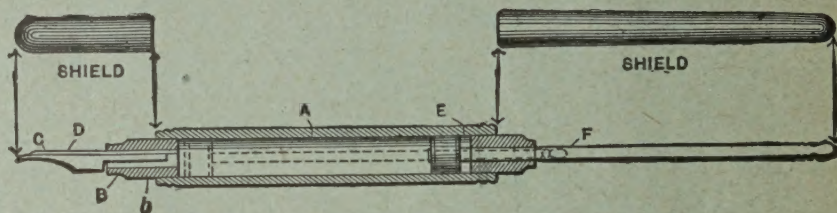
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